Int J Appl Posit Psychol (2025) 10:32
https://doi.org/10.1007/s41042-025-00224-2

RESEARCH

Life Crafting: Pilot-Testing an Online, Multidimensional Meaning in Life Intervention for Emerging Adults

Andrew D. Napier[1] · **Gavin R. Slemp**[1] · **Dianne A. Vella-Brodrick**[1]

Accepted: 10 April 2025 / Published online: 2 May 2025

Abstract

Life crafting has been suggested as an activity in which people proactively foster meaning in life and satisfy psychological needs, yet, to date, no evidence exists to support these claims. This study aimed to use a mixed-methods approach to test the acceptability and well-being benefits of a fully online and self-guided life crafting intervention for emerging adults. In total, 109 participants signed up for the intervention and provided baseline data; however, only 41 participants completed all five intervention modules and provided complete data. We found that well-being, meaning in life, and the three basic psychological needs of autonomy, competence, and relatedness increased after the life crafting intervention; however, well-being did not reach statistical significance. Based on responses to open-ended questions, participants found the intervention helpful, motivating, and well-structured. The most effective components of the program were exploring personal values, reflecting on meaningful relationships, and clarifying life goals with specific action plans. This pilot study provides initial support for a life crafting intervention. It sheds light on a multidimensional method to help young adults live more meaningfully, warranting larger randomised controlled trials to further evaluate the efficacy.

Keywords Life crafting · Meaning in life · Self-determination · Basic psychological needs · Emerging adults

Since Viktor Frankl's (1959) seminal work on meaning in life (MIL), psychologists have investigated the wide-ranging benefits of experiencing life as meaningful,

✉ Andrew D. Napier
a.napier@unimelb.edu.au

Gavin R. Slemp
gavin.slemp@unimelb.edu.au

Dianne A. Vella-Brodrick
dianne.vella-brodrick@unimelb.edu.au

[1] Center for Wellbeing Science, Faculty of Education, The University of Melbourne, Parkville, Australia

including increased life satisfaction, psychological adjustment, self-esteem, hope, optimism and resilience, as well as decreased negative affect, rumination, stress, depression, suicidal ideation, cardiovascular disease, antisocial behaviour, and substance use (Arslan & Yıldırım, 2021; King & Hicks, 2021; Steger, 2012; Zika & Chamberlain, 1992). MIL scholars have generally agreed that MIL is composed of three elements—referred to as the tripartite model—involving feelings of *coherence*: a sense that life "make sense" and events in life are seen as connecting in some non-random way, *purpose*: a sense that behaviours are guided by personally valued goals, and *significance*: a feeling that one's life matters and will have a lasting impact on the world (George & Park, 2016; Martela & Steger, 2016).

Given the conceptual agreement and broad benefits of experiencing life as meaningful, surprisingly little research exists testing interventions that may foster MIL in the general population. To date, the majority of MIL interventions have been conducted on the elderly or people with serious physical or psychological illnesses involving time- and resource-intensive therapeutic interventions (Manco & Hamby, 2021; Steger, 2022). While some brief MIL interventions for non-clinical populations have proven to be beneficial (e.g., Steger et al., 2014; van Agteren et al., 2021), most remain unidimensional, for example, focusing only on purpose (Bronk et al., 2019; Riches et al., 2020) neglecting a sense of coherence or significance.

One promising population for researching a multidimensional MIL intervention is emerging adulthood—a time when people begin to look for a sense of purpose, shape their identity, and make sense of their lives (Arnett et al., 2014; McAdams, 2016). Emerging adults—those aged from 18 to 29 years old—often find themselves in a transformative phase of life. This period is typically characterised by a vibrant exploration of one's sense of self, including one's values, beliefs, relationships, career motives, interests, hobbies, and life philosophies. (Arnett, 2000; Schwartz et al., 2013). Emerging adults often report searching for a sense of MIL more than older age groups, yet they experience less presence of MIL (Steger et al., 2009). Profiles of emerging adults find that those who report high levels of presence and low levels of searching for MIL report the best psychological functioning, whereas those who report high search but low presence report the lowest level of functioning (Dezutter et al., 2014). In fact, purpose in life has been found to be a stronger predictor of well-being in emerging adults than having a strong sense of identity (Sumner et al., 2015). Crafting a meaningful life may be one of the most important developmental tasks of this age (Mayseless & Keren, 2014). Yet, to date, very little research exists investigating how to help emerging adults navigate this search for a meaningful existence. One such intervention that offers potential is *life crafting* (Napier et al., 2024a).

1 Life Crafting

For the past two decades, psychologists have been exploring how people proactively shape their environments to better align with their values and skills in order to foster a sense of meaning, identity, and satisfy their psychological needs (de Bloom et al., 2020; Napier et al., 2024b; Wrzesniewski & Dutton, 2001). This process has been

labelled *crafting*. The majority of work has explored how employees develop meaning at work by crafting their jobs, though emerging research is investigating how people craft other parts of their lives as well (e.g., Kujanpää et al., 2022; Laporte et al., 2021; Petrou & Bakker, 2016). Of the types of crafting, life crafting is generally considered the most holistic concept, encompassing activities across all life domains (van Zyl et al., 2023).

Schippers and Ziegler (2019) originally proposed life crafting as an intervention to help people find more meaning in life by actively reflecting on their values, desired habits, future social lives and careers and making goal-attainment plans to reach them (see also de Jong et al., 2020). There has been criticism levied against the original life crafting intervention for lacking a theoretical focus on how a life crafting intervention might foster the various facets of meaning in life, specifically coherence and significance (Chen et al., 2022; van Zyl et al., 2023). In addition, the only empirical studies adopting this approach have used a variation on the original life crafting intervention, such as lacking an explicit focus on values exploration (e.g., Dekker et al., 2023) and have only measured academic outcomes (Schippers et al., 2015, 2020), rather than well-being or meaning in life variables, which was the focus of the original intervention (Schippers & Ziegler, 2019). Due to these issues, the life crafting intervention lacks support as an intervention that could help people find meaning in their lives.

1.1 The Life Crafting Intervention, Meaning in Life, and Psychological Needs

In response to some of the critiques of the life crafting intervention, a recent approach expanded on the original intervention, using both the tripartite model of MIL and self-determination theory (SDT) as guiding theoretical frameworks (Napier et al., 2024a). The expanded intervention includes: (1) explicitly exploring personal values, (2) exploring intrinsic interest, (3) reflecting on important relationships and ways to contribute to the well-being of others, (4) developing a coherent life narrative, and (5) setting and working toward self-concordant life goals. One advantage of using this intervention model is that it takes a multidimensional approach to MIL, focusing on the three facets instead of just one. For example, purpose should be stimulated by focusing on personal values and interests that help to guide life goals and, in turn, specific daily actions. Coherence should be encouraged by establishing a coherent life narrative (i.e., reflecting on how one's past self relates to one's present self and future goals). Finally, significance should be fostered by reflecting on personal values and how these fit within the broader context. Focussing on ways in which one might contribute to the well-being of others or the broader society should also foster feelings of significance (King & Hicks, 2021; Prinzing et al., 2023a, 2023b; Prinzing et al., 2023a, 2023b).

Meaning in life has also been linked to the satisfaction of the basic psychological needs of autonomy, competence, and relatedness according to SDT (Martela et al., 2018; Weinstein et al., 2012) and the satisfaction of these needs has been shown to be an important part of crafting (de Bloom et al., 2020; Napier et al., 2024b). Autonomy refers to the need to endorse one's actions based on personal values and

interests, competence refers to the need to feel mastery over one's environment, and relatedness refers to the need to feel connection and belonging among other people (Ryan & Deci, 2000, 2017). SDT suggests that only pursuits that satisfy these psychological needs will be experienced as meaningful. For example, parental pressure to pursue a career in medicine, despite a true passion for teaching, can lead a young person to experience a lack of autonomy in their life pursuits, hindering the development of meaning and well-being.

The expanded life crafting intervention emphasises basic need satisfaction in the intervention by focusing on personal values and intrinsic interests, a deep reflection on important relationships and broader social contribution, and a focus on making life plans concrete so they can be achieved (reflecting autonomy, relatedness, and competence, respectively). That is, it is expected that if the expanded life crafting intervention increases MIL, it is, in part, because it satisfies basic psychological needs (Napier et al., 2024a; Weinstein et al., 2012). These self-determined goal pursuits are referred to as self-concordant goals (Sheldon & Elliot, 1999), and numerous studies indicate that individuals experience higher levels of subjective well-being and MIL when they pursue more self-concordant goals (Koestner et al., 2008; Sangeorzan et al., 2024; Sheldon, 2014; Sheldon et al., 2004). In addition to autonomous goal pursuits, a coherent life narrative may foster a sense of autonomy by allowing participants to explore whether their values and intrinsic pursuits have been successfully integrated into their identity (Bauer & McAdams, 2000; Soenens & Vansteenkiste, 2011).

While life crafting may be an activity that benefits various age groups, the expanded life crafting intervention was specifically designed for young adults, as this age group commonly grapples with feelings of instability amidst a time of profound learning, development, and growth (Arnett et al., 2014). More autonomous behaviour regulation helps emerging adults experience a sense of direction, which can be beneficial in helping them choose among alternative identities (Assor, 2017; Ratelle & Guay, 2023). Therefore, young adults are uniquely placed to benefit from an active exploration of their identities and life narratives by exploring what gives their life meaning and how they might satisfy their basic psychological needs (Luyckx et al., 2009; McAdams, 2016; Scharf & Mayseless, 2010; Soenens & Vansteenkiste, 2011). In addition, this age group are high users of technology—often referred to as 'digital natives'— and an identity-based intervention such as life crafting has been suggested to have the potential to be scaled to allow delivery to larger cohorts of young adults who might access it completely online and self-paced (Dekker et al., 2020). This is promising, as there is evidence that online, asynchronous, goal-setting interventions can be effective for emerging adults' well-being (Clarke et al., 2015; Opie et al., 2024). Very little research has investigated the efficacy of digital MIL interventions for non-clinical populations (c.f. van Agteren et al., 2021). Therefore, more research is required to understand the benefits and limitations of delivering a MIL intervention to emerging adults in this way.

1.1.1 Aims and Hypotheses

Given these issues, we aim to test the feasibility of a self-paced life crafting intervention for emerging adults. We aim to understand whether the intervention increases

MIL and basic psychological needs as theorised. Given the focus on self-concordant goals as a route to MIL and well-being, we also aim to measure whether the type of goal set during the intervention moderates these beneficial outcomes. Finally, as this is a preliminary pilot study, we seek to test the feasibility of the intervention by gathering qualitative feedback on participants' experiences with the intervention and how it impacted their MIL and basic psychological needs.

For this study, we had several hypotheses. As the current intervention is theoretically intended to increase participants' MIL, we hypothesised that participants taking part in the life crafting intervention would report a significantly higher presence of MIL after the intervention (H1a). Given that searching for MIL is inversely related to its presence (Steger et al., 2008), we also hypothesised that participants would report a lower search for MIL post-intervention (H1b). We also hypothesised that participants' autonomy, competence, and relatedness satisfaction (H2a, 2b, and 2c, respectively) would increase after the intervention and that their autonomy, competence, and relatedness frustration (H3a, 3b, and 3c, respectively) would decrease after the intervention. Due to the close theoretical link between meaning in life, basic psychological needs, and well-being, we also hypothesised that participant's well-being would significantly increase after the intervention (H4). Finally, we hypothesised that the level of self-concordance in participants' goals set during the intervention would moderate any observed benefits. That is, we expect the intervention to yield greater positive outcomes when participant goals are more self-concordant (H5).

2 Method

2.1 Participants

Due to the lack of prior studies with a similar structure, no a priori power analysis was conducted. However, pilot studies are an important route to establishing effect sizes and determining appropriate sample sizes required for future studies (Arain et al., 2010). Participants aged 18–29 were recruited via online university advertisements, recruitment posters, and social media posts. A total of 109 participants signed up and provided baseline data. Nearly half of the participants did not continue past the first module (see Fig. 1). By the final module, 41 participants had completed the intervention and provided usable pre-to-post quantitative data. In addition, we received qualitative feedback from 35 of these participants.

The mean age of participants was 24.2 ($SD = 3.8$). The majority of participants identified as women (70.1%) and were completing a bachelor's degree (41.5%). Although the research was conducted at an Australian university, 70% of participants reported being of East or SE Asian descent. See Table 1 for a complete list of demographics.

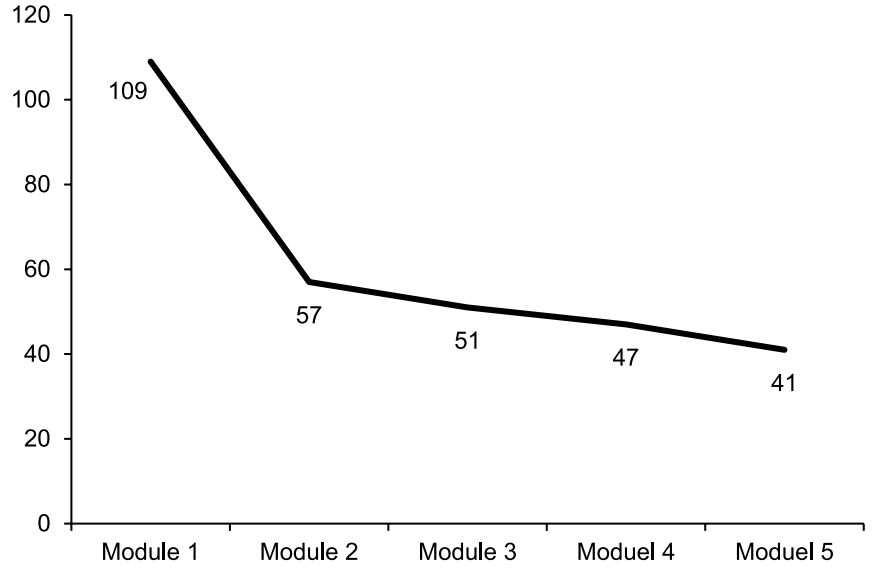

Fig. 1 Completion Rates Across the Five Intervention Modules

Table 1 Participant Demographics of the Pilot Study ($N = 41$)

Demographics		*n*	%
Gender	Men	9	22%
	Women	29	70.7%
	Non-binary/Third Gender	2	4.9%
	Not Disclosed	1	2.4%
Education Level	High School	9	22%
	Diploma or Equivalent	1	2.4%
	Bachelor's Degree or Equivalent	17	41.5%
	Master's Degree or Equivalent	14	34.1%
	Doctorate Degree	0	0%
Ethnicity	Caucasian	6	14.6%
	East/SE Asian	29	70.7%
	Indian	4	9.8%
	Latin American	2	4.9%

2.2 Materials and Procedure

2.2.1 Intervention Development

Prior to the pilot study, several focus groups (N = 18; 16 women, 2 men; M age = 24.2) were conducted to ascertain whether the content and delivery of the intervention were suitable. Through this initial feedback, changes were made to

the intervention delivery to make some of the questions clearer and the format more visual and engaging. The original intervention was created as a written workbook in three modules. Based on feedback from the focus groups, these were converted into more engaging, short videos and interactive activities and the modules were shortened and separated into five modules. Additionally, more examples were provided, and participants who wished to explore the intervention components in more detail were given additional resources. There was disagreement about whether this content would be best completed individually or in a group. Given that we aimed to pilot-test the life crafting intervention as a scalable, self-paced intervention, the decision was made to deliver it individually, without a group component. Finally, there was variability in the time that focus group participants wished to complete the intervention, with eight participants (44%) wishing to complete the intervention in one sitting while the remainder preferred time to reflect and return between modules. It was, therefore, decided to deliver each module successively, with three days between each one.

2.2.2 Intervention Content and Delivery

The final life crafting intervention was delivered as five separate online modules via Qualtrics, involving interactive exercises and video prompts that guided participants (see Table 2 for intervention components). The videos used in the intervention can be viewed on the Open Science Framework page: https://osf.io/hp4f9/. (Note: The values clarification activity included an additional interactive card sorting activity, which is not featured in the videos). Participants were instructed to write their responses to the prompts on their own device or a piece of paper, and that their specific responses would not be analysed as part of the research. By using this approach, we sought to promote more honest reflection and responses, given the personal nature of the reflections. Once participants had signed the consent form and completed the baseline measures, they were taken to the first module. Participants were instructed to take as much time as they needed when writing and reflecting, but 20–30 minutes per module was recommended as a minimum.

Once a participant completed a module, they would get a thank you message, were asked to spend some time reflecting on their responses and were automatically emailed a link to the next module three days later. Participants were intermittently sent reminder emails if they had not completed all five modules. Participants took between 12 to 87 days to complete the intervention, with 19 days being the median completion time. Participants reported how long they spent writing in each module. Total time spent writing across all five modules ranged from 15 to 285 minutes, with a mean of 86.7 minutes. Once participants had completed the intervention, they were sent a debriefing email that included additional information and the written version of the intervention, allowing them to continue reflecting on these questions in the future, as suggested by focus group participants.

Table 2 Components of Each Module of the Life Crafting Intervention

Module	Content
1. Values	**Description**. Values were discussed as guiding principles that help us to make decisions in life **Value clarification card sort**. Participants reflected on their core values by reading through a list of universal values (see Schwartz, 1992) with space to include their own. They were then asked to sort and choose their top 10 by dragging and dropping them into a new section (similar to a card sorting exercise) and refining them down to a top 3–5. These were referred to as their "core values" **Reflection**. Participants then wrote about these values, including why they selected them compared with the alternatives (i.e., what caused them to keep their core values in and not the others), who or what shaped these values, how they put these values into daily action, and any times when their actions did not reflect their values or when one value clashed with another
2. Life Goals	**Future Life**. Participants reflected on what kind of life they would like to live in 1–5 years from now and what their life might look like if nothing had changed. Participants focused on future life goals across four life domains: social/community, work or study, leisure/hobbies/health, and family **Motivation**. Participants were then asked to reflect on the motivation behind these goals, that is, whether they felt pressure to pursue them or whether they were based on their personal values and interests
3. Relationships and Contribution	**Supportive Relationships**. Participants were asked to think of an important person in their lives and how this person has supported them. They were asked to reflect on and write about what kind of relationship they would like with this person and one thing they could do to strengthen that relationship **Contribution.** They were then asked to expand their focus to other people and to write about ways they might incorporate other people's needs into their own life plan. This could be anything from helping a friend, volunteering, or considering how their future goals (e.g., their career) might contribute to society
4. Coherent Life Narrative	Participants were asked to consider their life story, joining together past, present, and future selves **Narrative Exercise**. Participants thought about their life as a book with chapters and considered what the chapters might be, which ones have gone, which one they are currently in, what might close this chapter and move to the next one, and if there were any themes across these chapters **Growth Exercise**. A second exercise encouraged participants to reflect on a past event that did not go to plan, then to consider what they had learnt from that activity, how they might have grown, and any advice they might give to their former self **Future-Focused Exercise**. Finally, participants were asked to consider themselves when they were old and the kinds of stories they wanted their friends or grandchildren to tell about them

Table 2 (continued)

Module	Content
5. Goal Action Plans	The final module asked participants to turn their broader goals into plans of action **Short-Term Goals**. First, they wrote down 4–6 short-term goals related to their broader life goals discussed in Module 2. These needed to be goals that could be achieved within the coming months. They were encouraged to make them specific, time-bound, and measurable so that they could easily track their progress **Obstacles and Implementation Intentions**. Next, participants reflected on possible obstacles and how they might overcome them. They were introduced to the concept of implementation intentions (Gollwitzer, 1999) or "if–then" plans and suggested using these to overcome obstacles that might arise **Goal Sharing**. Finally, they were asked to share at least one goal with another person so that they could be held accountable

2.3 Measures

After signing up but before accessing module one content, participants were asked to complete a baseline level of three well-being measures. Given that the positive benefits of the life crafting intervention have been theorised to occur from completing all five elements (Napier et al., 2024a), only those who completed all five modules were sent the follow-up measures. Additionally, participants who completed all five modules were sent questions relating to the self-concordance of the main life goal they focussed on during the intervention and five open-ended questions about their experience of the intervention.

2.3.1 Meaning in Life

Meaning in life was assessed using the 10-item Meaning in Life Questionnaire (MILQ; Steger et al., 2006). This well-validated scale measures general feelings of meaning in life and includes two sub-scales, the presence of meaning in life (e.g., "my life has a clear sense of purpose") and the search for meaning (e.g., "I am searching for meaning in my life). Participants responded on a 7-point Likert-type scale ranging from 'absolutely untrue' (1) to 'absolutely true' (7). See Table 3 for Cronbach's alphas from this study.

2.3.2 Basic Psychological Needs

Participants' autonomy, competence, and relatedness were measured using the Basic Psychological Need Satisfaction and Frustration Scale (BPNSFS). The BPNSFS has been validated across a variety of different cultures and measures (Chen et al., 2015). Both the satisfaction and frustration of the three needs across six sub-scales are measured using a 5-point Likert-type scale ranging from 'not at all true' (1) to 'completely true' (5). The sub-scales include autonomy satisfaction (e.g. "I feel my

Table 3 Cronbach's Alphas and Zero-Order Correlations of Pre- and Post-Intervention Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Wellbeing T1	(.92)																		
2. MIL Pres T1	.63**	(.81)																	
3. MIL Search T1	-.15	-.28	(.83)																
4. Aut Sat T1	.47**	.37*	.09	(.60)															
5. Aut Frust T1	-.49**	-.29	.15	-.67**	(.77)														
6. Rel Sat T1	.49**	.37*	-.21	.64**	-.60**	(.65)													
7. Rel Frust T1	-.28	-.29	.09	-.56**	.53**	-.65**	(.72)												
8. Comp Sat T1	.59**	.62**	-.20	.60**	-.59**	.60**	-.53**	(.81)											
9. Comp Frust T1	-.55**	-.59**	.25	-.35*	.56**	-.49**	.49**	-.67**	(.86)										
10. Wellbeing T2	.35*	.38*	.10	.55**	-.31	.28	-.03	.32*	-.20	(.87)									
11. MIL Pres T2	.30*	.64**	-.08	.23	-.23	.14	-.21	.28	-.38*	.36*	(.79)								
12. MIL Search T2	-.22	-.31*	.67**	.08	.10	-.19	.01	-.13	.39*	.08	-.03	(.87)							
13. Aut Sat T2	.28	.32*	-.03	.57**	-.49**	.50**	-.45**	.46**	-.30	.53**	.34*	.27	(.75)						
14. Aut Frust T2	-.58**	-.40*	.11	-.33*	.52**	-.35*	.35*	-.51**	.45**	-.41**	-.43**	.02	-.43**	(.73)					
15. Rel Sat T2	.21	.40*	.04	.55**	-.42**	.48**	-.43**	.26	-.20	.54**	.34*	.04	.52**	-.13	(.82)				
16. Rel Frust T2	-.31*	-.30	.14	-.33*	.34*	-.47**	.63**	-.31	.35*	-.15	-.41**	-.06	-.47**	.55**	-.40*	(.81)			
17. Comp Sat T2	.50**	.65**	.02	.48**	-.47**	.35*	-.34*	.49**	-.45**	.62**	.63**	.07	.64**	-.55**	.53**	-.28	(.74)		
18. Comp Frust T2	-.43**	-.57**	.09	-.48**	.51**	-.31*	.44**	-.50**	.68**	-.48**	-.68**	.10	-.52**	.58**	-.36*	.55**	-.64**	(.86)	
19. Self-Concord T2	.43*	.41*	-.03	.22	-.27	.30	-.26	.24	-.27	.40*	.57**	.001	.27	-.56**	.35*	-.45**	.54**	-.47**	(.25)

MIL Pres Meaning in Life (Presence), *MIL Search* Meaning in Life (Search), *Aut* Autonomy, *Rel* Relatedness, *Comp* Competence, *Sat* Satisfaction, *Frust* Frustration

Numbers on diagonal in parentheses are Cronbach's alphas

* < .05

** < 01

choices express who I really am"), autonomy frustration (e.g., "Most of the things I do I feel like I have to"), competence satisfaction (e.g., "I feel competent to achieve my goals"), competence frustration (e.g., "I feel like a failure because of the mistakes I make"), relatedness satisfaction (e.g., "I feel close and connected with other people who are important to me"), and relatedness frustration (e.g., "I feel the relationships I have are just superficial").

2.3.3 Well-Being

The 5-item World Health Organisation Well-Being Index (WHO-5) was used to assess general well-being. This scale is a well-validated and widely used scale to measure general well-being (Topp et al., 2015). It involves five questions about participant's mental and emotional state over the past two weeks rated on a 6-point Likert-type scale ranging from 'at no time' (0) to 'all of the time' (5). Questions include "I have felt active and vigorous" and "my daily life has been filled with things that interest me". The scale was chosen for its brief and non-invasive questions that relate to SDT variables such as intrinsic interests and vitality (Ryan & Deci, 2017).

2.3.4 Self-Concordance

At the end of the intervention, participants were asked to think of one main life goal that they focused on during the intervention and to answer four questions often used to assess goal self-concordance (e.g., Sheldon & Elliot, 1999). One question assessed how externally motivated the goal was (e.g., "I want to pursue this goal because someone else wants me to or because I can attain a reward [e.g., money]"). One assessed how introjected the motivation was (e.g., "I want to pursue this goal because I would feel guilty, ashamed, or anxious if I didn't; I feel as though I ought to pursue it"). One assessed the level of identified motivation (e.g., "I want to pursue this goal because I personally value it and believe it is a really important goal to have"). One measured the level of intrinsic motivation (e.g., "I want to pursue this goal because of the inherent fun and enjoyment it brings; the experience itself is why I'm pursuing it"). The external and introjected responses were summed (α for this study = 0.60) and subtracted from the sum of the identified and intrinsic responses (α for this study = 0.43) to produce a total self-concordance score. The combined self-concordance score showed poor internal consistency in this study ($\alpha = 0.25$).

2.3.5 Open-ended Questions

Participants were given five open-ended free-text questions to answer about their experience of the intervention. These questions asked participants about the most helpful and unhelpful parts of the intervention, what participants learnt from taking part, any changes they made in their lives due to the intervention, and any challenges they found in taking part. The feedback was analysed using Thematic Analysis, which is a flexible approach to qualitative analysis allowing for both a data-driven inductive approach and a theory-driven deductive approach (Braun & Clarke, 2006, 2014). In this case, we specifically analysed the data for themes related to the three

basic psychological needs of autonomy, competence, and relatedness. When meaning in life was mentioned, it was framed in the satisfaction of psychological needs, therefore meaning was not coded for separately. In addition, as this is a feasibility study, we coded for participant responses regarding the content or delivery of the program to ascertain areas that could be improved.

3 Results

3.1 Descriptive Statistics

Zero-order correlations are presented in Table 3. As there was a high dropout rate, especially after the completion of Module 1, we tested for any baseline differences in those who completed the intervention compared with those who did not. Participants who completed all the baseline measures ($N = 109$) were separated into two groups: those who had completed all five modules ($n = 41$) and those who completed either one, two, three, or four modules ($n = 67$). Independent samples *t*-tests revealed a significant difference in baseline levels of well-being for those who completed the intervention (M = 57.95, SD = 19.59) compared with those who dropped out (M = 47.58, SD = 20.20), $t(106) = 2.62$, $p = 0.01$, $d = 0.52$ (95% CI = 0.12 – 0.92). All other variables were not significantly different.

To assess any changes in the variables for those who completed all five modules of the intervention ($N = 41$), difference scores were calculated for T1 to T2 changes on all variables (except self-concordance, which was only measured once at T2). All difference scores were normally distributed, except for WHO-5, which had one outlier (*z*-score greater than 3). The outlier was Winzorised to the next closest score to retain it in the dataset (Dixon, 1980).

3.1.1 Hypothesis Testing

To test our hypothesis that the life crafting intervention would increase participants' meaning in life, need satisfaction, and well-being while decreasing their need frustration, we used paired-samples *t*-tests (see Table 4 for pre- and post-intervention scores). Effect sizes were calculated using Cohen's d, whereby 0.2 represents a small effect size, 0.5 a medium effect, and 0.8 a large effect (Cohen, 1988). Table 4 also presents 95% confidence intervals (CI) for the effect sizes, where a CI that crosses zero is classified as a non-significant effect. Reporting these effect sizes is important in pilot studies, as it helps future larger studies calculate appropriate sample sizes (Arain et al., 2010).

The presence of meaning in life significantly improved from before to after the intervention with a medium effect size, supporting Hypothesis 1a. The search for meaning in life did not significantly change from before the intervention to after it; thus, Hypothesis 1b was not supported. The satisfaction of autonomy, competence, and relatedness all showed significant increases post-intervention, supporting Hypothesis 2a, b, and c, respectively. The effect sizes were small to medium.

Neither the frustration of autonomy nor relatedness significantly reduced after the intervention. Therefore, Hypothesis 3a and c were not supported. Competence frustration showed a significant decrease after the intervention with a small to medium effect size, lending support to Hypothesis 3b. Participant well-being showed a slight improvement post-intervention, however this was not significant. Therefore, Hypothesis 4 was not supported.

To test Hypothesis 5, that the level of self-concordance of the participants' goals set during the intervention moderated the variables, we used the Mediation and Moderation for Repeated Measures (MEMORE) macro for SPSS v29 (Montoya, 2019). MEMORE tests for interaction effects in a two-instance repeated measure design, where the differences between the pre- and post-intervention measures are regressed onto the moderator (the level of goal self-concordance). Only variables that showed significant changes from pre- to post-intervention were tested for moderation. Self-concordance was mean centred before analysis. Level of goal self-concordance did not moderate any of the variables tested (see Table 5). Therefore, Hypothesis 5 was not supported.

4 Qualitative Feedback

4.1 Autonomy

A vast majority of participants spontaneously mentioned the importance of exploring and discussing their values as a benefit of the intervention. Understanding and acting on one's values is an inherent part of feeling autonomous, and the exploration of values was by far the most frequently discussed benefit. For example, one participant discussing the benefit of the intervention wrote: "Thinking about my motivation behind my goals. Really taking the time to think about the values that underpin them and what obstacles or pressures are preventing them". Several participants commented on the benefit of beginning the intervention with values exploration. One participant stated: "I thought the first module on choosing your personal values gave a lot of insight into larger goals and was a good first step. It helped me learn about my motivations behind my goals". Regarding the most helpful part of the program, another stated:

> Module 1 in justifying my top 3 values: It helped me solidify what really mattered to me in my life and enabled [me] to anchor myself so that [I] live by these values as best as possible.

Meaning in life was most salient when people reflected on their values; for example, one participant wrote: "For me, it was really meaningful and helpful, the module about values because it gave me time to think about what really matters to me in life and what I consider important".

Autonomy frustration was only evident in two codes. One participant stated that the intervention was not tailored enough to specific needs, while another felt the personal reflection left some concepts unresolved, stating, "it has also made me feel

Table 4 Means, Standard Deviations, and Effect Sizes (with 95% CIs) of Pre- and Post-Intervention Scores

	Pre-Intervention		Post-intervention					95% CI		
	M	SD	M	SD	*t*	df	*d*	LL	UL	*p*
MIL-Pres	22.75**	5.29	25.04**	4.51	3.46	40	0.54	0.21	0.87	0.001
MIL-Search	26.10	5.85	26.04	5.75	0.07	39	0.01	−0.29	0.32	0.95
Aut Sat	3.65*	0.62	3.86*	0.62	2.28	40	0.36	0.04	0.67	0.03
Aut Frust	2.98	0.86	2.95	0.84	−0.28	39	−0.05	−0.35	0.27	0.78
Rel Sat	3.89*	0.55	4.12*	0.58	2.64	39	0.42	0.09	0.74	0.01
Rel Frust	2.34	0.78	2.34	0.94	0.00	40	0	−0.30	0.30	1.00
Comp Sat	3.67*	0.80	3.95*	0.63	2.37	39	0.38	0.05	0.69	0.02
Comp Frust	2.93*	1.00	2.59*	1.07	−2.78	39	−0.44	−0.76	−0.11	0.008
Wellbeing	58.20	19.15	61.80	17.74	1.10	39	0.18	−0.14	0.48	0.28

MIL Pres Meaning in Life (Presence), *MIL Search* Meaning in Life (Search), *Aut* Autonomy, *Rel* Relatedness, *Comp* Competence, *Sat* Satisfaction, *Frust* Frustration

* = significant difference < 0.05; ** = significant different < 0.01

rather insecure because I realised that I have so many goals that I have not achieved yet and I feel a sense of pressure to accomplish these goals."

4.1.1 Competence

The satisfaction of competence was most salient when participants reflected on the modules where they turned their values and broader life goals into more short-term goals and set concrete plans of action. A feeling of achievement was frequently mentioned regarding setting specific goals. For example, one participant wrote "I was able to create a structure on how to achieve my goals easily and also a sense of optimism that I can achieve these goals". Some mentioned that setting specific goals helped them to feel less daunted in the face of their broader values. For example, when discussing what they had learnt from the intervention, one participant stated:

> To make the abstract concepts visual and practical. I think it is the most important takeaway for me. In most times, I will think of my life goals and what do I want for life, but they are all so far away and abstract. This program allows me to understand these things in detail and let me actually realize what I treasure.

Another wrote, "It helped me envision probable outcomes that seemed more feasible and vivid than ambiguous and daunting."

Competence frustration was evident, though less prominent, in some responses about the clarity of life goals. For example, one participant wrote "the program reiterated that I lack clarity in what I'm doing and what I want, so it was emotionally difficult to get through". Another participant felt that the life narrative element of the program brought up feelings of failure, stating "the negative aspect is reflecting on

Table 5 Interaction Effects of Goal Self-Concordance on Pre- to Post-Intervention Changes

	β	*95% CI for β*		*SE β*	*t*	*R*	R^2	*p*
		LL	UL					
MIL Pres	0.07	0.36	−0.20	0.14	0.55	0.09	0.009	0.59
Aut Sat	0.005	0.04	−0.03	0.02	0.28	0.05	0.002	0.78
Comp Sat	0.02	0.08	−0.03	0.03	0.95	0.16	0.03	0.35
Rel Sat	0.01	0.05	−0.03	0.02	0.46	0.08	0.007	0.64
Comp Frust	−0.04	0.02	−0.11	−0.03	−1.4	0.24	0.06	0.17

MIL Pres Meaning in Life (Presence), *MIL Search* Meaning in Life (Search), *Aut* Autonomy, *Rel* Relatedness, *Comp* Competence, *Sat* Satisfaction, *Frust* Frustration

the past mistakes or failures, or what I could have become, this part makes me sad and don't know how to respond".

4.1.2 Relatedness

Several participants commented on the relationship module as being beneficial specifically. For example, one wrote that "I have learnt that what really matters to me is my connection to myself and others—much more than financial ambition or professional accolades". Another participant found solace in their relationships, writing "this module also help[ed] me realise that I'm not alone and that I have a support network in which I can trust". A participant who identified as an introvert commented that the relationship module helped because:

> I found that I did not need many friends…instead I needed someone who I could lean on and support me at any phase in my life. I try to contact them more often to let them know that I am blessed to have them and how important they are to me.

Relatedness frustration was mentioned by a few who felt that they did not have important relationships to reflect on. For example, one participant stated that "for every situation, when I look back [at] my journal I found that I did my best and sometimes cry because I feel the only one who I can trust is…myself. I am trying to be more kind to myself".

4.1.3 Program Content and Delivery

Here, we briefly summarise the themes that participants mentioned regarding the program's content or delivery.

Content As reviewed above, many participants enjoyed the prompts and found them valuable for introspection, especially being able to reflect on their values and life goals. Some found the modules repetitive or too similar to one another. For example, some struggled to differentiate the prompts regarding life goals in Module Two and

goal plans in Module Five, suggesting these could be combined. Several participants mentioned that the prompts were difficult to answer, though all qualified this remark with the beneficial outcomes they gained. For example, one participant wrote, "Some questions were difficult but they should not be changed, it was good for me to actually sit down and think through." Some suggested additional support could help with these challenging questions. One participant found that the relationship module was not helpful as the advice was too general, stating, "it provides what most people should have known that they generally should do with their relationships. However, it is much more complicated when it comes to specific real-life situations and general advice cannot help".

Delivery A common theme was how people interacted with the intervention. Some participants wanted the videos to be more interactive and engaging, while several others suggested that having space on the website to write and store their responses, rather than writing on their own devices, would have made it easier to complete and return to after some reflection. Finally, three participants would have preferred to complete the intervention in one sitting rather than returning to it across multiple modules.

5 Discussion

This study was an initial pilot study to test the feasibility and some preliminary hypotheses regarding the recently expanded life crafting intervention. Results showed that the intervention significantly improved participant's presence of meaning in life (MIL), autonomy, competence, and relatedness satisfaction, as well as significantly reduced their competence frustration. The search for meaning, well-being, and autonomy and relatedness frustration were not significantly impacted. Results also showed that the level of self-concordance of the goals set during the intervention did not significantly moderate any of the positive changes. Qualitative data suggest that some of these benefits came from the ability to deeply explore what participants found to be valuable and then turning those into concrete plans to experience a sense of achievement and competence. These findings are in line with a growing body of research indicating that the combination of understanding one's values with making progress toward value-driven goals may be a key process leading to well-being outcomes, with both aspects being essential (Bojanowska et al., 2022; Chase et al., 2013; Koestner et al., 2002, 2008; Russo-Netzer & Atad, 2024). This study suggests that this combination may also be important for fostering meaning in life.

To our knowledge, this was the first empirical evidence that a life crafting intervention could have a positive impact on MIL as theorised (Napier et al., 2024a). As highlighted in the introduction, the three facets of meaning may have been stimulated through setting valued life goals that help organise daily actions; connecting past, present, and future selves in a coherent narrative; and reflecting on relationships and a meaningful contribution to others (King & Hicks, 2021; Shin & Steger, 2014; Steger, 2022). Most meaning interventions involve older participants or those who are experiencing a significant mental or physical illness (Manco & Hamby,

2021), with few investigating MIL in the general population (c.f. van Agteren et al., 2021). This study adds to the literature demonstrating that MIL is not simply for those lacking it but can be beneficial for the general population, including emerging adults.

The life crafting intervention also had a positive impact on the satisfaction of autonomy, competence, and relatedness. Autonomy was most likely stimulated by reflecting on personal values and interests, and considering how these might fit into broader life goals and narratives. Competence was satisfied by creating goal-plans and realising specific steps to achieving broader life goals. There was also a reduction in competence frustration, as participants saw how their broader values and goals could be achieved. However, reflecting on life goals also brought up feelings of incompetence in some reports, an issue that could be addressed with more support in future life crafting interventions. Lastly relatedness was satisfied by reflecting on important relationships and how one can give back to society. Participants were also asked to share their life goals with someone, with one participant indicating that they benefited from this process.

As for why the intervention did not significantly increase well-being, this may be due to the limited power in the sample, as the mean scores did increase, albeit not significantly. Pilot studies offer an important opportunity to establish effect sizes that may be used in future power estimation for larger trials. Caution must be exercised when conducting observed power analyses after the data have been collected (Dziak et al., 2020). However, using a post-hoc sensitivity analysis calculator for repeated measures (https://webpower.psychstat.org), based on the effect size of 0.18 found in this study for the WHO-5 well-being changes and the final sample size, it was estimated that there was inadequate power to detect a significant finding (power < 0.8). Therefore, larger life crafting studies with adequate power may find a significant improvement in well-being.

Another reason may be that the intervention has a greater impact on people's cognitions than on their physical actions within the short time frame. Similar programs of research, such as values exploration (Firestone et al., 2019) and goal-setting interventions (Dekker et al., 2023), have found either no significant impacts or a reduction in well-being. Reflecting on values and future goals may highlight the discrepancy between the current and desired states, which may not always have a positive impact on well-being.

We did not find support for the idea that the level of self-concordance of the goals set during the intervention would moderate the positive changes. In part, this might simply be because participants were not answering the questions consistently, given the poor internal consistency of the self-concordance measure found for this study. This might also be explained by the fact that the intervention fostered self-concordance in participants, therefore all participants had relatively high self-concordance scores at the end of the intervention. While we only measured self-concordance at one time point, the average score in this study ($M = 5.6$) was higher than the average reported in other studies using the same method (e.g., Sheldon & Elliot, 1999: $M = 3.89$; Sheldon et al., 2004: $M = 3.04$; Judge et al., 2005: $M = 4.17$).

Finally, we tested the theoretical assumption that a life crafting intervention is scalable by being delivered entirely online and self-guided to large cohorts simultaneously,

as opposed to small groups of participants. While this is possible, several parts of this research program point to the limitations of this approach, such as the high dropout rate across the modules. In part, this might be addressed by offering all content in one sitting, along with recommendations for completion, while still providing choice and flexibility (e.g., suggesting participants give themselves time to reflect but allowing them to complete it in one sitting if desired). This was reflected in the feedback of several participants. The life crafting intervention could also be delivered in a group setting with the opportunity for individual reflection before group discussions. This finding aligns with the qualitative responses to a goal-setting program conducted by Dekker et al. (2023), in which participants requested more tailored feedback and support. Research also shows that programs with in-person elements, such as face-to-face human contact, support, or guidance, had larger effects and fewer dropouts than those that were fully self-guided (Lehtimaki et al., 2021). Given the high drop-out rate and lower baseline level of well-being for those who dropped out of our study, a group element may potentially capture those who would benefit the most, holding them accountable for continued engagement. While scaling up the life crafting program does not necessarily entail making changes to the content, incorporating a group element would affect scalability, as live in-person or online meetups would need to be organised ahead of time rather than allowing participants to complete the program in their own time. The efficacy of this approach is a topic that future research may investigate.

5.1 Implementation Fidelity

This study served to investigate the feasibility of a life crafting intervention before larger studies are conducted. Using an implementation fidelity approach, certain elements can be targeted to make adjustments for future studies. For example, Carroll et al. (2007) suggest that adherence, exposure, quality of delivery, participant responsibilities, and program differentiation are important elements to consider in intervention development. Adherence, dose, and quality refer to whether and how much participants engaged with the intervention as researchers had intended. As the life crafting intervention was delivered online using pre-recorded videos and activities, participants all received the exact same content in the same order. The dosage of the intervention varied as many participants did not complete all modules, though we did not measure outcome variables for those participants, only those who completed all five modules. Future research may investigate whether those who only partially completed the intervention benefited as much as those who completed all modules. Interestingly, those who did not complete all modules had lower baseline levels of well-being, suggesting that capturing this group of participants may be an important aim for future life crafting interventions. Participant responsiveness regards how participants respond to the intervention and whether they deem it useful. Both the quantitative and qualitative outcomes suggest that life crafting did benefit participants. Using the qualitative feedback, future adjustments may be made to foster increased engagement, such as including a group component, including more support and check-ins, or allowing participants to complete all modules in one sitting if they choose. Finally, differentiation relates to which components of an intervention are essential for its

success. This aspect is hard to measure without delivering each component separately (Carroll et al., 2007). However, the initial feedback suggests that the values and goal-setting components of the life crafting intervention were the most beneficial. Future research may investigate the degree to which the coherent life narrative and relationship modules foster MIL above and beyond the other modules.

5.1.1 Limitations and Future Research

While encouraging, this study is not without its limitations. To begin with, as this was an initial feasibility study, our relatively small sample may be underpowered to find subtle effects related to well-being and self-concordance. Thus, now that life crafting has been shown to positively impact MIL and basic psychological needs, larger studies should be conducted to confirm these findings. We also did not include a control group. Therefore, we cannot rule out the possibility that extraneous influences are the real cause of the observed changes. Future life crafting research could include an active control group that participates in writing exercises to determine if writing alone is sufficient to stimulate meaning and need satisfaction. Another limitation is that we did not include a follow-up measure. While well-being did not show significant improvement immediately after the intervention, it is possible that this may reflect the time required to see changes that could impact well-being, such as beginning to achieve personal goals. This sequential progress, where an intervention leads to increased need satisfaction and subsequent changes in well-being over time, is supported by research in SDT (e.g., Sheldon et al., 2010). By including a follow-up, future life crafting research could test whether well-being begins to change over longer periods and whether need satisfaction mediates the changes.

Finally, in this study, we chose not to analyse the written responses by participants in their personal diaries/responses to allow for more honest responses, though future research in life crafting interventions may benefit from this. For example, expressive writing has shown many health benefits (Baikie & Wilhelm, 2005), and this is in part due to the types of words people use, such as a progression in the use of causal (e.g., "because") and insight (e.g., "understand") words (Pennebaker & Seagal, 1999). Therefore, some of the benefits of life crafting—especially the coherent narrative aspect—may, in part, come from the insights gained based on the types of words used.

6 Conclusion

This study was the first known attempt to investigate whether a self-paced life crafting intervention impacts MIL, basic psychological needs, and well-being in emerging adults. We found general support for the idea that life crafting can positively impact MIL and basic psychological needs, in part by allowing participants to reflect on what they value and how these valued goals could be achieved in real terms. Life crafting reflects one way in which emerging adults who are struggling to find a sense of purpose, to make sense of their lives, and to satisfy their basic psychological needs may begin to seek out direction and clarity. This study begins to shed light on one way in which we may help young adults proactively create a more meaningful

life. However, a more nuanced understanding of how to optimise the program for greater uptake and engagement is now needed on a larger scale.

Author Contribution AN designed the study protocol and intervention, recruited participants, collected and analysed data, and wrote the final manuscript. GS and DVB assisted in study design and read, edited, and approved the final manuscript.

Funding Open Access funding enabled and organized by CAUL and its Member Institutions. This work was supported by an Australian Government Research Training Program Scholarship awarded to AN, provided by the Australian Commonwealth Government and the University of Melbourne (Grant number: 726470).

Australian Government,726470

Data Availability Data is available from the Open Science Framework link: https://osf.io/hp4f9/

Declarations

Ethical Approval The study was approved by the Human Research Ethics Committee at a large research-focused Australian university (approval number 25969).

Informed Consent All participants read the participant information statement and gave written informed consent before signing up for the study. Participants who completed the entire intervention (all five modules) and gave usable data were entered into a draw to win a $200 gift voucher.

Competing interest The authors declare no competing interests.

References

Arain, M., Campbell, M. J., Cooper, C. L., & Lancaster, G. A. (2010). What is a pilot or feasibility study? A review of current practice and editorial policy. *BMC Medical Research Methodology, 10*, 1–7. https://doi.org/10.1186/1471-2288-10-67

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist, 55*(5), 469–480. https://doi.org/10.1037/0003-066X.55.5.469

Arnett, J. J., Žukauskienė, R., & Sugimura, K. (2014). The new life stage of emerging adulthood at ages 18–29 years: Implications for mental health. *The Lancet Psychiatry, 1*(7), 569–576. https://doi.org/10.1016/s2215-0366(14)00080-7

Arslan, G., & Yıldırım, M. (2021). A longitudinal examination of the association between meaning in life, resilience, and mental well-being in times of coronavirus pandemic. *Frontiers in Psychology, 12*, 645597. https://doi.org/10.3389/fpsyg.2021.645597

Assor, A. (2017). The striving to develop an authentic inner compass as a key component of adolescents' need for autonomy: Parental antecedents and effects on identity, well-being, and resilience. In B.

Soenens, M. Vansteenkiste, & P. S. Van (Eds.), *Autonomy in adolescent development: Towards conceptual clarity* (pp. 119–144). Psychology Press.
Baikie, K. A., & Wilhelm, K. (2005). Emotional and physical health benefits of expressive writing. *Advances in Psychiatric Treatment, 11*(5), 338–346. https://doi.org/10.1192/apt.11.5.338
Bauer, J. J., & McAdams, D. P. (2000). Competence, relatedness, and autonomy in life stories. Psychological Inquiry, 11(4), 276–279. https://www.jstor.org/stable/1449620
Bojanowska, A., Kaczmarek, ŁD., Urbanska, B., & Puchalska, M. (2022). Acting on values: A novel intervention enhancing hedonic and eudaimonic well-being. *Journal of Happiness Studies, 23*(8), 3889–3908. https://doi.org/10.1007/s10902-022-00585-4
Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa
Braun, V., & Clarke, V. (2014). What can "thematic analysis" offer health and wellbeing researchers? *International Journal of Qualitative Studies on Health and Well-Being, 9*(1), 26152. https://doi.org/10.3402/qhw.v9.26152
Bronk, K. C., Baumsteiger, R., Mangan, S., Riches, B., Dubon, V., Benavides, C., & Bono, G. (2019). Fostering purpose among young adults: Effective online interventions. *Journal of Character Education, 15*(2), 21–38.
Carroll, C., Patterson, M., Wood, S., Booth, A., Rick, J., & Balain, S. (2007). A conceptual framework for implementation fidelity. *Implementation Science, 2*, 1–9. https://doi.org/10.1186/1748-5908-2-40
Chase, J. A., Houmanfar, R., Hayes, S. C., Ward, T. A., Vilardaga, J. P., & Follette, V. (2013). Values are not just goals: Online ACT-based values training adds to goal setting in improving undergraduate college student performance. *Journal of Contextual Behavioral Science, 2*(3–4), 79–84. https://doi.org/10.1016/j.jcbs.2013.08.002
Chen, S., Van Der Meij, L., van Zyl, L. E., & Demerouti, E. (2022). The life crafting scale: Development and validation of a multi-dimensional meaning-making measure. *Frontiers in Psychology, 13*, 795686. https://doi.org/10.3389/fpsyg.2022.795686
Chen, B., Vansteenkiste, M., Beyers, W., Boone, L., Deci, E. L., der Kaap-Deeder, V., Duriez, B., Lens, W., Matos, L., Mouratidis, A., Ryan, R. M., Sheldon, K. M., Soenens, B., Van Petegem, S., & Verstuyf, J. (2015). Basic psychological need satisfaction, need frustration, and need strength across four cultures. *Motivation and Emotion, 39*(2), 216–236. https://doi.org/10.1007/s11031-014-9450-1
Clarke, A. M., Kuosmanen, T., & Barry, M. M. (2015). A systematic review of online youth mental health promotion and prevention interventions. *Journal of Youth and Adolescence, 44*, 90–113. https://doi.org/10.1007/s10964-014-0165-0
Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale.
de Bloom, J., Vaziri, H., Tay, L., & Kujanpää, M. (2020). An identity-based integrative needs model of crafting: Crafting within and across life domains. *Journal of Applied Psychology, 105*(12), 1423–1446. https://doi.org/10.1037/apl0000495
de Jong, E. M., Ziegler, N., & Schippers, M. C. (2020). From shattered goals to meaning in life: Life crafting in times of the COVID-19 pandemic. *Frontiers in Psychology, 11*, 2648. https://doi.org/10.2139/ssrn.3656964
Dekker, I., De Jong, E. M., Schippers, M. C., De Bruijn-Smolders, M., Alexiou, A., & Giesbers, B. (2020). Optimizing students' mental health and academic performance: AI-enhanced life crafting. *Frontiers in Psychology, 11*, 1063. https://doi.org/10.3389/fpsyg.2020.01063
Dekker, I., Schippers, M., & Van Schooten, E. (2023). Reflective goal-setting improves academic performance in teacher and business education: A large-scale field experiment. *Journal of Research on Educational Effectiveness*, 1–29. https://doi.org/10.1080/19345747.2023.2231440
Dezutter, J., Waterman, A. S., Schwartz, S. J., Luyckx, K., Beyers, W., Meca, A., Kim, S., Whitbourne, S. K., Zamboanga, B. L., Lee, R. M., Hardy, S. A., Forthun, L. F., Ritchie, R. A., Weisskirch, R. S., Brown, E. J., & Caraway, S. J. (2014). Meaning in life in emerging adulthood: A person-oriented approach. *Journal of Personality, 82*(1), 57–68. https://doi.org/10.1111/jopy.12033
Dixon, W. J. (1980). Efficient analysis of experimental observations. *Annual Review of Pharmacology and Toxicology, 20*(1), 441–462. https://doi.org/10.1146/annurev.pa.20.040180.002301
Dziak, J. J., Dierker, L. C., & Abar, B. (2020). The interpretation of statistical power after the data have been gathered. *Current Psychology, 39*, 870–877. https://doi.org/10.1007/s12144-018-0018-1
Firestone, J., Cardaciotto, L., Levin, M. E., Goldbacher, E., Vernig, P., & Gambrel, L. E. (2019). A web-based self-guided program to promote valued-living in college students: A pilot study. *Journal of Contextual Behavioral Science, 12*, 29–38. https://doi.org/10.1016/j.jcbs.2019.01.004
Frankl, V. E. (1959). *Man's search for meaning*. Simon and Schuster.

George, L. S., & Park, C. L. (2016). Meaning in life as comprehension, purpose, and mattering: Toward integration and new research questions. *Review of General Psychology, 20*(3), 205–220. https://doi.org/10.1037/gpr0000077

Gollwitzer, P. M. (1999). Implementation intentions: Strong effects of simple plans. *American Psychologist, 54*(7), 493–503. https://doi.org/10.1037/0003-066X.54.7.493

Judge, T. A., Bono, J. E., Erez, A., & Locke, E. A. (2005). Core self-evaluations and job and life satisfaction: The role of self-concordance and goal attainment. *Journal of Applied Psychology, 90*(2), 257–268. https://doi.org/10.1037/0021-9010.90.2.257

King, L. A., & Hicks, J. A. (2021). The science of meaning in life. *Annual Review of Psychology, 72*, 561–584. https://doi.org/10.1146/annurev-psych-072420-122921

Koestner, R., Lekes, N., Powers, T. A., & Chicoine, E. (2002). Attaining personal goals: Self-concordance plus implementation intentions equals success. *Journal of Personality and Social Psychology, 83*(1), 231–244. https://doi.org/10.1037/0022-3514.83.1.231

Koestner, R., Otis, N., Powers, T. A., Pelletier, L., & Gagnon, H. (2008). Autonomous motivation, controlled motivation, and goal progress. *Journal of Personality, 76*(5), 1201–1230. https://doi.org/10.1111/j.1467-6494.2008.00519.x

Kujanpää, M., Syrek, C., Tay, L., Kinnunen, U., Mäkikangas, A., Shimazu, A., Wiese, C. W., Brauchli, R., Bauer, G. F., Kerksieck, P., Toyama, H., & de Bloom, J. (2022). Needs-based off-job crafting across different life domains and contexts: Testing a novel conceptual and measurement approach. *Frontiers in Psychology*. https://doi.org/10.3389/fpsyg.2022.959296

Laporte, N., Soenens, B., Brenning, K., & Vansteenkiste, M. (2021). Adolescents as active managers of their own psychological needs: The role of psychological need crafting in adolescents' mental health. *Journal of Adolescence, 88*, 67–83. https://doi.org/10.1016/j.adolescence.2021.02.004

Lehtimaki, S., Martic, J., Wahl, B., Foster, K. T., & Schwalbe, N. (2021). Evidence on digital mental health interventions for adolescents and young people: Systematic overview. *JMIR Mental Health, 8*(4), e25847. https://doi.org/10.2196/25847

Luyckx, K., Vansteenkiste, M., Goossens, L., & Duriez, B. (2009). Basic need satisfaction and identity formation: Bridging self-determination theory and process-oriented identity research. *Journal of Counseling Psychology, 56*(2), 276–288. https://doi.org/10.1037/a0015349

Manco, N., & Hamby, S. (2021). A meta-analytic review of interventions that promote meaning in life. *American Journal of Health Promotion, 35*(6), 866–873. https://doi.org/10.1177/0890117121995573

Martela, F., Ryan, R. M., & Steger, M. F. (2018). Meaningfulness as satisfaction of autonomy, competence, relatedness, and beneficence: Comparing the four satisfactions and positive affect as predictors of meaning in life. *Journal of Happiness Studies, 19*(5), 1261–1282. https://doi.org/10.1007/s10902-017-9869-7

Martela, F., & Steger, M. F. (2016). The three meanings of meaning in life: Distinguishing coherence, purpose, and significance. *The Journal of Positive Psychology, 11*(5), 531–545. https://doi.org/10.1080/17439760.2015.1137623

Mayseless, O., & Keren, E. (2014). Finding a meaningful life as a developmental task in emerging adulthood: The domains of love and work across cultures. *Emerging Adulthood, 2*(1), 63–73. https://doi.org/10.1177/2167696813515446

McAdams, D. P. (2016). Life authorship in emerging adulthood. In J. J. Arnett (Ed.), *The Oxford handbook of emerging adulthood* (pp. 438–446). Oxford University Press.

Montoya, A. K. (2019). Moderation analysis in two-instance repeated measures designs: Probing methods and multiple moderator models. *Behavior Research Methods, 51*, 61–82. https://doi.org/10.3758/s13428-018-1088-6

Napier, A. D., Slemp, G. R., & Vella-Brodrick, D. A. (2024a). Life crafting and self-determination: An intervention to help emerging adults create an authentic and meaningful life. *Emerging Adulthood., 12*(4), 629–647. https://doi.org/10.1177/21676968241252196

Napier, A. D., Slemp, G. R., & Vella-Brodrick, D. A. (2024b). Crafting one's life and its relationship with psychological needs: A scoping review. *Applied Research in Quality of Life*. https://doi.org/10.1007/s11482-024-10322-z

Opie, J. E., Vuong, A., Welsh, E. T., Gray, R., Pearce, N., Marchionda, S., Mutch, R., & Khalil, H. (2024). Outcomes of best-Ppractice guided digital mental health interventions for youth and young adults with emerging symptoms: Part I. A systematic review of socioemotional outcomes and recommendations. *Clinical Child and Family Psychology Review, 27*, 424–475. https://doi.org/10.1007/s10567-024-00469-4

Pennebaker, J. W., & Seagal, J. D. (1999). Forming a story: The health benefits of narrative. *Journal of Clinical Psychology, 55*(10), 1243–1254. https://doi.org/10.1002/(SICI)1097-4679(199910)55:10%3c1243::AID-JCLP6%3e3.0.CO;2-N

Petrou, P., & Bakker, A. B. (2016). Crafting one's leisure time in response to high job strain. *Human Relations, 69*(2), 507–529. https://doi.org/10.1177/0018726715590453

Prinzing, M. M., Sappenfield, C. A., & Fredrickson, B. L. (2023a). What makes me matter? Investigating how and why people feel significant. *The Journal of Positive Psychology, 18*(6), 995–1011. https://doi.org/10.1080/17439760.2023.2168562

Prinzing, M., Le Nguyen, K., & Fredrickson, B. L. (2023b). Does shared positivity make life more meaningful? Perceived positivity resonance is uniquely associated with perceived meaning in life. *Journal of Personality and Social Psychology, 125*(2), 345–366. https://doi.org/10.1037/pspi0000418

Ratelle, C. F. & Guay, F. (2023) Developmental issues in emerging adulthood. In R. M. Ryan (Ed.) *The Oxford handbook of self-determination theory.* (pp 572–588). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780197600047.013.29

Riches, B. R., Benavides, C. M., & Dubon, V. X. (2020). Development of a fostering purpose intervention. *Evaluation and Program Planning, 83*, 101857. https://doi.org/10.1016/j.evalprogplan.2020.101857

Russo-Netzer, P., & Atad, O. I. (2024). Activating values intervention: An integrative pathway to well-being. *Frontiers in Psychology, 15*, 1375237. https://doi.org/10.3389/fpsyg.2024.1375237

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68–78. https://doi.org/10.1037/0003-066x.55.1.68

Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. Guilford Press.

Sangeorzan, P. C., Goodson, W. L., & Bohon, L. M. (2024). The why to bear any how: Goal self-concordance, meaning, and depressive and anxious symptomatology. *International Journal of Applied Positive Psychology*, 1–20. https://doi.org/10.1007/s41042-024-00158-1

Scharf, M., & Mayseless, O. (2010). Finding the authentic self in a communal culture: Developmental goals in emerging adulthood. In S. Shulman & J. E. Nurmi (Eds.), *The role of goals in navigating individual lives during emerging adulthood: New directions for child and adolescent development, 130* (pp. 83–95). Jossey-Bass.

Schippers, M. C., Morisano, D., Locke, E. A., Scheepers, A. W., Latham, G. P., & de Jong, E. M. (2020). Writing about personal goals and plans regardless of goal type boosts academic performance. *Contemporary Educational Psychology, 60*, 101823. https://doi.org/10.1016/j.cedpsych.2019.101823

Schippers, M. C., Scheepers, A. W., & Peterson, J. B. (2015). A scalable goal-setting intervention closes both the gender and ethnic minority achievement gap. *Palgrave Communications, 1*(1), 1–12. https://doi.org/10.1057/palcomms.2015.14

Schippers, M. C., & Ziegler, N. (2019). Life crafting as a way to find purpose and meaning in life. *Frontiers in Psychology, 10*, 2778. https://doi.org/10.3389/fpsyg.2019.02778

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology, 25*, 1–65.

Schwartz, S. J., Zamboanga, B. L., Luyckx, K., Meca, A., & Ritchie, R. A. (2013). Identity in emerging adulthood: Reviewing the field and looking forward. *Emerging Adulthood, 1*(2), 96–113. https://doi.org/10.1177/216769681

Sheldon, K. M. (2014). Becoming oneself: The central role of self-concordant goal selection. *Personality and Social Psychology Review, 18*(4), 349–365. https://doi.org/10.1177/1088868314538549

Sheldon, K. M., Abad, N., Ferguson, Y., Gunz, A., Houser-Marko, L., Nichols, C. P., & Lyubomirsky, S. (2010). Persistent pursuit of need-satisfying goals leads to increased happiness: A 6-month experimental longitudinal study. *Motivation and Emotion, 34*, 39–48. https://doi.org/10.1007/s11031-009-9153-1

Sheldon, K. M., & Elliot, A. J. (1999). Goal striving, need satisfaction, and longitudinal well-being: The self-concordance model. *Journal of Personality and Social Psychology, 76*(3), 482–497. https://doi.org/10.1037/0022-3514.76.3.482

Sheldon, K. M., Elliot, A. J., Ryan, R. M., Chirkov, V., Kim, Y., Wu, C., Demir, M., & Sun, Z. (2004). Self-concordance and subjective well-being in four cultures. *Journal of Cross-Cultural Psychology, 35*(2), 209–223. https://doi.org/10.1177/002202210326224

Shin, J. Y., & Steger, M. F. (2014). Promoting meaning and purpose in life. In A. C. Parks & S. M. Schueller (Eds.) *The Wiley Blackwell handbook of positive psychological interventions*, (pp. 90–110). Wiley. https://doi.org/10.1002/9781118315927.ch5

Soenens, B., spsampsps Vansteenkiste, M. (2011). When is identity congruent with the self? A self-determination theory perspective. In S., Schwartz, K., Luyckx, V., Vignoles (Eds.) *Handbook of identity theory and research*. Springer. https://doi.org/10.1007/978-1-4419-7988-9_17

Steger, M. F. (2012). Experiencing meaning in life: Optimal functioning at the nexus of well-being, psychopathology, and spirituality. In P. T. P. Wong (Ed.), *The human quest for meaning: Theories, research, and applications* (2nd ed., pp. 165–184). Routledge.

Steger, M. F. (2022). Making meaning in life: A thematic review of successful experimental psychological and psychotherapeutic interventions. In *Meaning in Life International Conference 2022: Cultivating, promoting, and enhancing meaning in life across cultures and life span* (pp. 5–20). Atlantis Press

Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. (2006). The meaning in life questionnaire: Assessing the presence of and search for meaning in life. *Journal of Counseling Psychology, 53*(1), 80–93. https://doi.org/10.1037/0022-0167.53.1.80

Steger, M. F., Kashdan, T. B., Sullivan, B. A., & Lorentz, D. (2008). Understanding the search for meaning in life: Personality, cognitive style, and the dynamic between seeking and experiencing meaning. *Journal of Personality, 76*(2), 199–228. https://doi.org/10.1111/j.1467-6494.2007.00484.x

Steger, M. F., Oishi, S., & Kashdan, T. B. (2009). Meaning in life across the life span: Levels and correlates of meaning in life from emerging adulthood to older adulthood. *The Journal of Positive Psychology, 4*(1), 43–52. https://doi.org/10.1080/17439760802303127

Steger, M. F., Shim, Y., Barenz, J., & Shin, J. Y. (2014). Through the windows of the soul: A pilot study using photography to enhance meaning in life. *Journal of Contextual Behavioral Science, 3*(1), 27–30.

Sumner, R., Burrow, A. L., & Hill, P. L. (2015). Identity and purpose as predictors of subjective well-being in emerging adulthood. *Emerging Adulthood, 3*(1), 46–54. https://doi.org/10.1177/2167696814532796

Topp, C. W., Østergaard, S. D., Søndergaard, S., & Bech, P. (2015). The WHO-5 Well-Being Index: A systematic review of the literature. *Psychotherapy and Psychosomatics, 84*(3), 167–176. https://doi.org/10.1159/000376585

van Agteren, J., Bartholomaeus, J., Steains, E., Lo, L., & Gerace, A. (2021). Using a technology-based meaning and purpose intervention to improve well-being: A randomised controlled study. *Journal of Happiness Studies, 22*, 3571–3591. https://doi.org/10.1007/s10902-021-00383-4

van Zyl, L. E., Custers, N. C., Dik, B. J., van der Vaart, L., & Klibert, J. J. (2023). The holistic life-crafting model: A systematic literature review of meaning-making behaviors. *Frontiers in Psychology, 14*, 1271188. https://doi.org/10.3389/fpsyg.2023.1271188

Weinstein, N., Ryan, R. M., & Deci, E. L. (2012). Motivation, meaning, and wellness: A self-determination perspective on the creation and internalization of personal meanings and life goals. In P. T. P. Wong (Ed.), *The human quest for meaning: Theories, research, and applications* (pp. 81–106). Routledge.

Wrzesniewski, A., & Dutton, J. E. (2001). Crafting a job: Revisioning employees as active crafters of their work. *Academy of Management Review, 26*(2), 179–201. https://doi.org/10.5465/amr.2001.4378011

Zika, S., & Chamberlain, K. (1992). On the relation between meaning in life and psychological well-being. *British Journal of Psychology, 83*(1), 133–145. https://doi.org/10.1111/j.2044-8295.1992.tb024