

**Securing Adolescent Mental Health by Training Need Crafting:
A Randomized Controlled Trial with School, Leisure, and Social Media
Outcomes**

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Preprint

This manuscript has been submitted for publication and is currently under peer review. It has not yet undergone peer review and should not be considered the final published version.

If accepted for publication, the final version of record may differ from this preprint.

Citation:

Van de Castele, M., Soenens, B., Van den Bogaard, D., & Vansteenkiste, M. (2026). *Securing adolescent mental health by training need crafting: A randomized controlled trial with school, leisure, and social media outcomes* [Preprint].

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Abstract

Need crafting denotes the active pursuit of experiences that satisfy the basic psychological needs for autonomy, competence, and relatedness. This RCT evaluated an online need crafting intervention among 299 adolescents ($M_{\text{age}}=16.34$; 55% girls), examining general and domain-specific (school, leisure, social media) effectiveness. The intervention directly improved need crafting and need satisfaction, particularly among engaged participants. Serial mediation analyses confirmed that intervention-induced increases in need crafting were associated with higher need satisfaction and lower need frustration, in turn relating to improved well-being and reduced ill-being. These effects were replicated in the school and leisure domains, but not for social media. The findings provide initial evidence for need crafting interventions in adolescence. This study was pre-registered on AsPredicted (bv8pj7; November 27, 2024).

Keywords: Adolescents, Mental Health, Self-Determination Theory; Basic Psychological Needs, Intervention, Social Media

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Adolescence is a developmental period marked by increasing independence, agency, and responsibility, particularly in how time is allocated across daily life domains. For example, study time is often monitored less closely by parents, and adolescents gain greater decision-making autonomy in how and with whom they choose to spend their time (Lionetti et al., 2019). Against this background, the substantial increase in adolescents' engagement with social media (e.g., Faverio & Sidoti, 2025; Nagata et al., 2025) has been widely cited as a potential contributor to secular trends of declining adolescent mental health (e.g., Faverio & Sidoti, 2025; Nagata et al., 2025). Based on the assumption that time spent on social media displaces engagement in other, more enriching activities (Hall & Liu, 2022), recent national policy initiatives, recommendations to parents, and interventions aimed at improving adolescents' mental health have largely focused on limiting adolescents' social media use. However, such approaches show small or inconsistent mental health effects (Ferguson et al., 2025; Ferguson, 2025; Orben et al., 2026) and do not automatically translate into greater engagement in more enriching activities (Hall et al., 2019; Hall & Liu, 2022; Röhlke, 2025). Although social media use has become a highly visible focal point in contemporary debates on adolescent mental health, an exclusive focus on this single context risks obscuring more fundamental psychological processes that operate *across* multiple life domains.

Rather than being determined solely by the amount of time spent on particular activities or in specific (digital) contexts, Self-Determination Theory (SDT; Ryan & Deci, 2017; Ryan, 2023) emphasizes that adolescents' mental health depends largely on whether their daily activities and social interactions are accompanied by satisfaction or frustration of the basic psychological needs for autonomy, competence, and relatedness (Vansteenkiste et al., 2020; 2023). Across various contexts such as school, leisure, and sport, need satisfaction is consistently associated with better adjustment and well-being (e.g., Evans, 2023; Meng et al., 2026), a pattern that extends to social media, where need-based experiences were found to matter more for mental health than mere time spent (Van de Castele et al., 2023). Building on this observation, interventions may benefit from shifting their focus from restricting specific activities (e.g., social media) toward strengthening adolescents' ability to proactively seek need-fulfilling experiences across different life domains, a skill that may foster resilience when coping with rapidly changing developmental contexts (e.g., new technologies). This approach aligns with the

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emphasis in positive psychology on the cultivation of strengths and resources rather than the mere reduction of risk behaviors (Csikszentmihalyi & Seligman, 2000).

The capacity to recognize need-satisfying activities and persons in one's life and to proactively select and give priority to these activities and relationships has been conceptualized as *need crafting* (Laporte et al., 2021). Given its proactive and malleable nature and its robust association with adolescents' mental health, need crafting has been highlighted as a particularly relevant target for intervention (Laporte et al., 2021, Laporte et al., 2022). Although intervention studies with university students and adults suggest that need crafting can be trained (Laporte et al., 2024; van den Bogaard, 2024, 2025), the effectiveness for adolescents and their generalizability across multiple life domains remain largely unexplored (van den Bogaard et al., 2026). Therefore, the current study evaluates a brief online intervention designed to strengthen adolescents' general capacity for need crafting, thereby examining not only effects on general need satisfaction and mental health but also on need satisfaction and well-being in the specific life domains of school, leisure, and social media.

Basic Psychological Needs Underlying Adolescent Mental Health Across Contexts

To move beyond narrow explanations of adolescent mental health (e.g., Ferguson et al., 2025; Odgers, 2024), a theoretical framework is needed that captures the underlying psychological processes shaping adolescents' well-being across life domains. Basic Psychological Needs Theory (BPNT; Vansteenkiste et al., 2020; 2023), a critical mini-theory within the larger SDT (Ryan, 2023), offers such a framework by focusing on fundamental psychological needs that are assumed to be universal across contexts and fluctuating circumstances. Within BPNT, individual differences in mental health, both within and across contexts, are largely explained by variations in the satisfaction and frustration of the basic psychological needs for autonomy, competence, and relatedness (Vansteenkiste et al., 2020; 2023). Autonomy refers to experiencing a sense of volition and psychological freedom in one's actions, thoughts, and feelings. Competence reflects experiences of effectiveness and mastery in everyday tasks and in the pursuit of meaningful goals. Relatedness involves experiencing a sense of belonging and feeling cared for in close and reciprocal relationships.

These needs are considered essential psychological nutrients: whereas their satisfaction promotes well-being and optimal functioning ("bright pathway"), their active frustration undermines

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psychological adjustment and increases vulnerability for mental health problems (“dark pathway”) (Vansteenkiste et al., 2023). Research demonstrates the relevance of this dual-process across the lifespan (Soenens & Vansteenkiste, 2023) and specifically during adolescence, a developmental period in which higher levels of need satisfaction have consistently been associated with better psychosocial adjustment and higher well-being, whereas need frustration relates to a range of maladaptive outcomes, including emotional dysregulation, difficulties in identity development, and internalizing symptoms (Campbell, Boone, et al., 2018; Emery et al., 2016; Luyckx et al., 2009; Lorenz et al., 2026). Importantly, these effects manifest across life domains that are central during adolescence, including school (Meng et al., 2026), leisure activities (e.g., Evans, 2023; Leversen et al., 2012), and more recently social media use (Van de Castele et al., 2023, 2024). These findings underscore that adolescents’ well-being is not shaped within a single domain, but emerges across multiple, interrelated life contexts. In addition, need-based experiences in one domain may amplify, compensate for, or undermine experiences in another domain (Milyavskaya et al., 2013; Vansteenkiste et al., 2020). For example, adolescents who experience a more balanced pattern of need satisfaction across important life domains have been found to report higher well-being and better school adjustment, above and beyond the level of need satisfaction within each domain separately (Milyavskaya et al., 2009). At the same time, not all life domains may contribute equally to well-being. To illustrate, while both offline and online (social media-based) need experiences relate to adolescents’ mental health, offline need satisfaction was found to play a more pronounced role for mental health outcomes than need satisfaction during social media use (Van de Castele et al., 2023). This points to the importance not only of need-supportive environments, but also of adolescents’ own active role in seeking out such experiences.

Need Crafting as an Agentic Pathway to Psychological Need Fulfillment

Need crafting refers to the capacity to proactively reflect on, select, and shape activities, relationships, and contexts that support one’s basic psychological needs for autonomy, competence, and relatedness (Laporte et al., 2021). Need crafting comprises two closely intertwined components: awareness and action. *Awareness* concerns insight into which activities, interactions, and contexts support one’s psychological needs. Although research consistently shows associations between need satisfaction and better mental health, the specific sources and pathways through which these needs are

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fulfilled vary substantially between individuals (Vansteenkiste et al., 2023). To illustrate, some adolescents derive need satisfaction from soccer practice, while others find greater fulfillment in activities such as music or creative hobbies. Developing awareness of one's own sources of need satisfaction is thus a crucial prerequisite for effective need crafting. Knowing what is personally need-satisfying, however, is not sufficient on its own; adolescents are more likely to experience need satisfaction when they are both willing and able to act on this awareness. The *action* component involves taking concrete steps to increase the likelihood of encountering need-satisfying experiences. This may involve initiating particular activities, modifying how one engages in them, or seeking out specific social partners (Laporte et al., 2021). Importantly, this skill requires a degree of experimentation and exploration, as individuals need to try out different possibilities to discover what personally fosters a sense of autonomy, competence, and relatedness.

Given adolescents' increasing cognitive capacities and the central role of exploration during this developmental period, adolescence is a particularly salient and perhaps critical phase for the development of need crafting skills (Laporte et al., 2021), which may help protect and sustain mental health (van den Bogaard et al., 2025). Whereas younger children largely depend on parents, teachers, and other socialization figures to have their psychological needs met, adolescents gradually gain greater agency in selecting need-conducive activities, relationships, and contexts (Soenens & Vansteenkiste, 2023). Research has begun to demonstrate the dynamic role of need crafting in mental health during adolescence. Longitudinal and diary studies showed that adolescents' need crafting fluctuates substantially within adolescents across time, with daily within-person increases in need crafting being systematically associated with more need satisfaction and well-being (Laporte et al., 2022; van den Bogaard et al., 2025). This protective and dynamic role of need crafting is promising in the light of recent calls for interventions among adolescents that foster strengths and resilience in this age group rather than merely reducing vulnerabilities (e.g., Vrijen & Soenens, 2026).

Building on this rationale, *LifeCraft* was developed – an online, structured, and individual intervention comprising a mixture of psychoeducation, brainstorming, and action plans to engage in need crafting. An initial study during the COVID-19 pandemic showed that adults who completed the training showed improvements in need crafting, need satisfaction, and well-being compared to a passive control

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group, with effects persisting for up to one month after the intervention (Laporte et al., 2024). These effects occurred mainly among participants displaying high engagement during the online program. Subsequent studies have replicated and extended these findings to university students (van den Bogaard et al., 2024, 2025). To date, however, research on need crafting interventions in adolescent samples remains scarce (van den Bogaard et al., 2026). Consequently, it is important to examine whether LifeCraft is also effective for adolescents, who may benefit strongly from preventive attempts to strengthen their mental health.

Moreover, the effectiveness of need crafting interventions has to date only been examined at the level of general need satisfaction, leaving open the question of whether training need crafting yields domain-specific effects across life domains that are central to adolescents (e.g., school, leisure, social media). This is a theoretically relevant question, given that within SDT, need-based experiences are understood to operate at multiple levels, including the general, domain, and experience level, each of which independently and jointly contributes to well-being (Milyavskaya et al., 2012; Vallerand, 1997). Although prior correlational research points to the potential beneficial role of need crafting in specific domains such as education (Huang et al., 2024; Reeve & Tseng, 2011), physical activity (Sheldon et al., 2020), and social media use (Van de Castele et al., 2025), differential effects of need crafting across contexts have not yet been experimentally tested. The LifeCraft intervention program is domain-unspecified, leaving participants free to reflect on and choose in which domain they want to pursue need-based experiences. Consequently, finding *variety* across domains would provide indirect evidence that adolescents spontaneously invest their newly developed need crafting skills more in contexts that are deeply conducive to need fulfillment, consistent with SDT's organismic dialectical perspective (Ryan & Vansteenkiste, 2023) and with findings suggesting that, for example, offline need-based experiences contribute more strongly to mental health than those arising from social media use (Van de Castele et al., 2024). Alternatively, *similar effectiveness* across domains would highlight need crafting as a trans-contextual skill, suggesting that strength and resilience interventions may be as effective as, or even preferable to, context-specific approaches.

Hypotheses

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The present study examines the effectiveness of an adolescent-adapted version of LifeCraft (Laporte et al., 2024; van den Bogaard et al., 2024, 2025), using a Randomized Controlled Trial (RCT) including an intervention and passive control group. Program effects were first examined at the general level, capturing adolescents' general need crafting, need-based experiences (i.e., need satisfaction, frustration), and mental health (i.e., well-being, ill-being). Second, effects were tested at the domain-level, by evaluating the effects of the intervention on domain-specific need crafting, need satisfaction, and well-being. Three domains were selected based on prior work (e.g., Van de Castele et al., 2023), that is school, leisure, and social media. Three overarching hypotheses guided the evaluation of the program's effectiveness.

First, the study examined whether participation in LifeCraft compared to the control condition predicted direct changes in adolescents' need crafting (i.e., hypothesized mechanism of change), need-based experiences (i.e., primary outcomes), and mental health (i.e., secondary outcomes). We expected significant program effects (Hypothesis 1), as reflected in stronger increases in need crafting, need satisfaction, and well-being, and stronger decreases in need frustration and ill-being from pre- to post-measurement among participants in the experimental condition. Given the short duration of the intervention, we expected that these effects might attenuate at follow-up but would remain detectable. As for the domain-specific tests, given the paucity of prior research, no explicit hypotheses were formulated regarding the domains in which the effects would be most pronounced.

Second, the study examined whether the effectiveness of the program would depend on participants' engagement within the intervention (i.e., homework assignments). Building on prior interventions (Laporte et al., 2024; van den Bogaard et al., 2024, 2025), we expected that adolescents with higher engagement will experience more positive changes in need crafting, need-based experiences, and mental health, whereas weaker or no effects would emerge among participants with low engagement relative to the control group (Hypothesis 2). Again, this hypothesis was first tested at the general level and consequently at the domain-specific level.

Third, the study examined whether need crafting functioned as a mechanism explaining potential program effects. We expected indirect effects on mental health (i.e., secondary outcomes) through changes in need crafting (i.e., the mechanism of change) and subsequent changes in need-based

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experiences (i.e., primary outcomes) from pre- to post- measurement (Hypothesis 3). The domain-level tests are restricted to the “bright pathway” from intervention-induced need crafting to well-being via need satisfaction separately for the domains of school, leisure, and social media.

Method

Participants and Procedure

The sample, which was collected in two waves (October 2023 and October 2024), consisted of 299 adolescents ($M_{\text{age}} = 16.34$; $SD = .77$; range 15-18), with 55% identifying as female, 66% following an academic track and 97.9% having a Belgian nationality. Participants were randomly assigned to the control (46.5%) or intervention (53.5%) condition. All participants filled out a baseline questionnaire. Drop-out across the study can be consulted in Figure S1 (supplementary material).

Participant recruitment and follow-up were embedded in a Developmental Psychology course, in which each undergraduate student recruited one adolescent participant (aged 15 to 18 years), excluding close relationships (e.g., family members or individuals from their youth associations). To ensure an equal gender distribution, students were assigned to recruit either a male or female participant. Prior to recruitment, the undergraduate students were extensively trained in a series of skill sessions. First, they were familiarized with the theoretical framework underlying the study and the overall research design. Second, they received practical training on how to approach, inform, and follow up with participants, including guidance on handling various scenarios they might encounter. Ethical aspects of participant recruitment and data collection were addressed explicitly. To ensure procedural standardization, students also received a detailed step-by-step manual outlining all required research procedures, including standardized information to be communicated to participants, and a standardized SMS schedule to remind participants of upcoming intervention sessions. All students signed a confidentiality agreement prior to contacting potential participants, committing to not disclose any information obtained from participants.

During a home visit, the undergraduate student explained the study practicalities and was available for questions while participants completed a baseline questionnaire. All other questionnaires and intervention links, including a reminder if no reply was given, were sent by the first author through Qualtrics. The intervention phase started on Monday. Participants in the intervention group received an

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online session and participants in the control condition a brief questionnaire on Monday, Wednesday and Friday, for two consecutive weeks. On the Sunday following the sixth session, participants completed a post-measurement questionnaire. A final follow-up questionnaire was sent two weeks after the post-measurement. Approval for this study procedure was given by the faculty's Ethical Committee (2022-114). Informed consent was obtained from all participating adolescents, and at least one caregiver provided active written consent. This study was pre-registered on AsPredicted (<https://aspredicted.org/bv8pj7.pdf>); at the time of pre-registration, part of the data had already been collected (wave 1).

Program

To ensure age-appropriateness, focus groups with adolescents were conducted prior to implementation, in which participants evaluated existing intervention materials (Laporte et al., 2024; van den Bogaard et al., 2024, 2025) on three dimensions: (1) clarity (e.g., vocabulary), (2) format (e.g., session length, spacing), and (3) appeal (e.g., types of videos). Feedback was subsequently used to develop new intervention material (e.g., examples, video material) to the specific needs and preferences of an adolescent population.

The intervention consisted of six online sessions spread across two weeks (Monday, Wednesday, Friday). In session one, participants were introduced to the targeted concepts (i.e., basic psychological needs and need crafting) through an adolescent-friendly animated video. Each of the six sessions focused on one basic psychological need (i.e., autonomy, competence or relatedness) and included: (a) a challenge to seek a need satisfying experience, which was introduced via a short video message, (b) an exercise to brainstorm potential activities, (c) peer testimonials presented in video format, and (d) completion of an action plan in which participants specified what activity they would undertake, when, where, and with whom, as well as potential obstacles and strategies to address them (Seo et al., 2017). A seventh optional session consisted of a set of consolidation exercises. Table S1 (Supplementary Material) provides an overview of the intervention content in more detail.

Measures

An identical survey was administered at the pre-, post- and follow-up measurement. Internal consistencies were generally good to excellent for the general-level study variables ($\alpha = .81-.90$) and

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domain-level well-being and need satisfaction scales ($\alpha = .77-.90$). Reliability was somewhat lower for domain-specific need crafting scales, particularly for social media need crafting at T1 and T2 ($\alpha = .51$ and $.46$, respectively), which should be taken into account when interpreting findings involving these scales. More details are presented in Table S2 in the Supplementary Material.

Need Crafting. A 12-item version of the Need Crafting Scale (NCS; Laporte et al., 2021, see for example van den Bogaard et al., 2025) was used to measure need crafting at the general-level. For each psychological need, four items were retained: two assessing awareness (e.g., *“last week it was clear to me which people love me, and which people I love”*) and two assessing action (e.g., *“last week I tried to do things as much as possible that I really wanted to do rather than things that had to be done”*). In addition, three domain-specific action items were used per domain to assess need crafting within school, leisure and social media (e.g., *“[domain specific stem + I tried as much as possible to]...to do things I am good at (competence crafting).”* All items were rated on a 7-point Likert scale ranging from 1 (“completely not true”) to 7 (“completely true”).

Need Satisfaction and -Frustration. Need satisfaction and frustration were assessed using a 12-item version of the Basic Psychological Need Satisfaction and Frustration Scale (BPNSNF; Chen et al., 2015; see for example Van de Castele et al., 2023) within each of the three domains (i.e., school, leisure, social media). Need satisfaction (e.g., *“[domain specific stem]...I felt confident that I could do things well”*) and need frustration (e.g., *“[domain specific stem]...most things I did felt like ‘I had to’”*) were each time assessed using six items. All items were rated on a 5-point Likert scale ranging from 1 (“completely not true”) to 5 (“completely true”). As no general-level measure of need satisfaction and frustration was included in the questionnaire, composite scores were computed by averaging the domain-specific scores across the three domains, serving as proxies for general need satisfaction and frustration, respectively. In the domain-level analyses, domain-specific scores were used.

Well-being. General well-being was assessed using a composite score combining indicators of subjective vitality and life satisfaction. Subjective vitality was measured with the six items of the vitality measure (Ryan & Frederick, 2023; e.g., *“Last week I felt a sense of liveliness and spark.”*). Life satisfaction was assessed with one item from the Satisfaction with Life Scale (SWLS; Diener et al., 1985; *“Last week I was satisfied with my life”*). In addition, domain-specific well-being was assessed

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with three vitality items per domain (e.g., “[domain specific stem]... I felt energetic.”). All items were measured on a 5-point Likert scale ranging from 1 (“completely disagree”) to 5 (“completely agree”).

III-Being. Ill-being was assessed using a composite score consisting of 12 items capturing symptoms of anxiety and depression. Anxiety was measured with six items from the short form of the State-Trait Anxiety Inventory (STAI; Marteau & Bekker, 1992; e.g., “Last week I felt tense.”). Depressive affect was assessed with six items from the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977; e.g., “Last week I felt depressed.”). All items were rated on a 4-point Likert scale ranging from 1 (“almost never”) to 4 (“almost always”).

Program Engagement

In the beginning of the online sessions, adolescents in the experimental condition indicated the extent to which they had executed their action plan prior to the introduction of the next challenge. This item was rated on a 5-point Likert scale ranging from 1 (“not executed at all”) to 5 (“fully executed”). Responses of 4 (“almost completely executed”) and 5 (“completely executed”) were interpreted as indicating sufficient engagement and were therefore recoded as 1. Responses ranging from 1 to 3 were recoded as 0, reflecting low engagement. These dichotomous scores were summed across modules to obtain a total engagement score ranging from 0 to 6. Participants were classified as highly engaged (coded as 1) if they obtained a total score of 4 or higher, and as lowly engaged (coded as 0) if they scored 3 or lower. This operationalization is consistent with previous LifeCraft studies (Laporte et al., 2024; van den Bogaard et al., 2024).

Analytic Strategy

The analytic strategy followed prior intervention studies (Laporte et al., 2024; van den Bogaard et al., 2024). All data processing, R-codes and Mplus files can be consulted via OSF (<https://osf.io/4bv7y>). The main hypotheses were examined using latent change models (LCMs) in Mplus X (Muthén & Muthén, 2017). LCMs estimates change over time by modelling latent variables for both intercepts (initial levels) and slopes (change) (Beyers & Goossens, 2008). Model fit was evaluated using RMSEA, SRMR, and CFI, with values of RMSEA and SRMR < .08 and CFI ≥ .90 indicating acceptable fit. Missing data were handled using full information maximum likelihood.

Unconditional Latent Change Models. First, unconditional models were specified including a latent intercept and two latent change factors (T1-T2 and T2-T3). These models captured mean-level change and individual differences in initial levels and change. Interpretation of condition effects on slopes depends on the direction of mean-level change. For constructs that were multidimensional, an internal-consistency approach was applied (Kishton & Widaman, 1994), using the corresponding subscales as indicators of the latent variables. Need crafting was indicated by the autonomy, competence, and relatedness subscales. For need satisfaction and frustration, domain-specific autonomy, competence, and relatedness subscales were used, with general scores computed by averaging across domains. Well-being was indicated by life satisfaction and vitality, and ill-being by depressive symptoms and fatigue. In the domain-specific models, need crafting and well-being were modeled at the item level, whereas need satisfaction was specified using domain-specific subscales.

Hypothesis Testing. All hypotheses were examined using a two-step approach: first, general-level models testing overall effects; second, domain-specific models examining generalization across school, leisure, and social media. All primary analyses statistically controlled for age, gender, education type, and the timing of the baseline questionnaire. To test hypothesis 1, a first series of LCMs included condition as a predictor (dummy coded: 0 = control condition; 1 = experimental condition). To address Hypothesis 2, a second series of LCMs examined the role of program engagement. Two dummy variables were created, contrasting the control group with the high- (dummy 1) and low-engagement (dummy 2) groups. To test hypothesis 3, serial mediation LCMs were estimated to examine whether intervention-induced need crafting predicted mental health through changes in need-based experiences. Indirect effects were evaluated using the Model Indirect command in Mplus.

Results

Preliminary Analysis

Descriptives and Background Characteristics

Descriptive statistics for the study variables are presented in Table S2. Correlations among the general study variables are presented in Table 1. To examine whether baseline study variables differed as a function of background characteristics, we conducted four MANCOVAs with gender, age, education type, and the timing of the baseline survey (i.e., whether the baseline questionnaire was

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completed during the autumn vacation) as predictors of the study variables at baseline (one for the general-level outcomes and three for the domain-specific outcomes). Gender showed a multivariate effect in the general model (Wilks' $\Lambda = .84$, $F(5, 290) = 11.04$, $p < .001$) and in the social media domain model (Wilks' $\Lambda = .89$, $F(4, 291) = 11.04$, $p < .001$), but not in the school or leisure domain models. Univariate tests and adjusted means are reported in Table S3 (supplementary materials). Specifically, participants identifying as female reported lower general need crafting, need satisfaction, and well-being, and higher general need frustration and ill-being compared to those identifying as male. In the social media domain model, univariate analyses revealed a significant effect only for need satisfaction, with participants identifying as female reporting lower need satisfaction during social media use compared to those identifying as male. No other significant multivariate effects were observed.

Baseline Differences Between the Conditions

To examine whether the experimental and control conditions differed in background characteristics and baseline scores on the study variables, independent-samples t-tests were conducted for continuous variables (age and all study variables) and chi-square tests for categorical variables (gender, nationality, education type, and timing of the baseline questionnaire). The results of these analyses are presented in Table S4 (supplementary materials). No significant differences between conditions were found for either background characteristics or baseline study variables, indicating that the groups were comparable prior to the intervention.

Drop-Out Analyses

First, drop-out during the program (experimental group) or during the diary assessments (control group) was operationalized as a count variable reflecting the total number of days participated (range = 0-6). Poisson regression analyses indicated that participation was not significantly predicted by condition, baseline study variables, or background characteristics. Second, drop-out at post-test and follow-up measurements was coded as a binary variable (1 = missing, 0 = observed). Logistic regression analyses showed that attrition at post-test and follow-up was not predicted by condition, baseline study variables, or background characteristics, with the exception of gender, which was significantly associated with attrition at follow-up. Specifically, participants identifying as female had approximately 50% lower odds of attrition at follow-up ($p < .05$).

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Primary Analysis

Unconditional Models

We first estimated five unconditional LCMs for the general study variables to investigate mean-level change and variability in change in general need crafting, need satisfaction, need frustration, well-being, and ill-being (see Table S5 in the supplementary materials). Results indicated a significant mean-level decrease in need crafting and well-being, and a mean-level increase in need frustration and ill-being from pre- to post-measurement (T1 to T2). No mean-level change was found for need satisfaction during this interval. In addition, a significant mean-level decrease in need crafting and need satisfaction, and an increase in need frustration, was found from post- to follow-up measurement (T2 to T3). No mean-level change was observed for well-being and ill-being between post- and follow-up measurement.

Next, similar unconditional LCMs were tested for the domain-specific variables (see Table S5 in the supplementary materials), showing that these trends were especially noticeable in the school and leisure domains, but not in the social media domain. Specifically, mean-level decreases in school need satisfaction, leisure need crafting, and leisure need satisfaction were observed from pre- to post-measurement. From post- to follow-up, a further significant decrease in school need crafting was observed. No other mean-level changes were significant during this interval. Taken together, this pattern suggests a general deterioration in adolescents' need-related experiences and mental health, especially within the school and leisure domains, across the study period, which partly overlapped with the period leading up to adolescents' exams.

Hypothesis 1: Effects of Condition

Effects of the general LCMs examining the effect of condition on general need crafting, need satisfaction, need frustration, well-being, and ill-being were estimated in separate models which are presented in Table 2. All models showed acceptable to excellent fit (CFI: .889-1.000, RMSEA: .000-.061, SRMR: .022-.096). Across outcomes, condition effects were observed for need crafting (i.e., mechanism of change) and need satisfaction (i.e., primary outcome) for the change from pre- to post-measurement, while no direct effects were found on need frustration (i.e., primary outcome) and the secondary outcomes (i.e., well-being and ill-being). Specifically, a significant positive effect of

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condition on latent change from pre- to post-measurement emerged for both variables. Consistent with the declining mean-level trajectories observed in the unconditional models for need crafting, this effect indicates that decreases in need crafting were less pronounced among adolescents in the experimental condition compared to those in the control condition. For need satisfaction, for which no overall mean-level change was observed, this effect indicates that adolescents in the experimental condition showed a more positive change than those in the control condition. No significant condition effects were observed for subsequent change from post- to follow-up after accounting for the initial change, indicating that the intervention-related improvements in need crafting and need satisfaction were largely maintained over the follow-up period. In other words, although no additional gains were observed after the intervention, the initial improvements did not diminish over time.

Domain-specific LCMs testing the effects of condition on domain-specific need crafting, need satisfaction, and well-being indicated that the condition effects on need crafting and need satisfaction were internally replicated in the school and leisure domains, but not in the social media domain (see Table 2). Specifically, significant positive effects of condition were found for change from pre- to post-measurement in need crafting and need satisfaction in the school domain, and need satisfaction in the leisure domain, indicating more positive changes in these variables for adolescents in the experimental condition compared to those in the control condition. In contrast, a significant negative effect of condition emerged for change in leisure need crafting from pre- to post-measurement, indicating a more negative change in leisure need crafting among adolescents in the experimental condition two weeks after following the program. This latter finding stands in contrast to the other observed condition effects. No other significant condition effects were observed in the domain-specific models.

Hypothesis 2: Effect of program engagement

To test the effects of program engagement, two dummies were created, contrasting (1) high engagement in the experimental condition (58%) versus the control group, and (2) low engagement (43%) versus the control group. Effects of program engagement are reported in Table 2. All models showed good to excellent fit (CFI: .904-1.000, RMSEA: .011-.055, SRMR: .022-.089). Consistent with the findings for Hypothesis 1, significant effects from pre- to post-measurement were observed only for need crafting and need satisfaction, but not for need frustration, well-being and ill-being. However, these

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effects occurred exclusively for the high engagement contrast. No significant effects were observed for the low engagement contrast or for the other outcomes.

Domain-specific LCMs showed a similar pattern. Specifically, the previously observed effects from T1 to T2 in the school and leisure domains emerged only for participants who were highly engaged in the program, but not for participants with low engagement, relative to the control group. In addition to the findings of Hypothesis 1, a significant positive effect of condition on changes in leisure need crafting emerged from pre- to post, but again only for the high engagement contrast. Importantly, from post- to follow-up measurement, a negative effect for low engagement contrast emerged for school need satisfaction, indicating that participants with low engagement in the program showed stronger decreases in school need satisfaction compared to the control group, whereas no such effects emerge for the high engagement contrast. Consistent with this pattern, the previously observed decrease in leisure need crafting from T2 to T3 was not significant for the high engagement group and is likely only present for low engaged participants given that the low engagement contrast was marginally significant.

Hypothesis 3: Serial Indirect Effects Models

The third aim was to test whether need crafting functions as an intervening variable explaining the effects of the program on need-based experiences and mental health. A serial indirect effects LCM for the general study variables from pre- to post-measurement was tested as depicted in Figure 1. The results showed that the program effect on need crafting was significant and positive for the high-engagement group (i.e., mechanism of change). In turn, increases (or less pronounced decreases) in need crafting were positively associated with increases in need satisfaction and decreases in need frustration (i.e., primary outcomes), which were in turn related to higher well-being and lower ill-being (i.e., secondary outcomes), respectively. Moreover, both indirect paths were significant for the high engagement contrast, but not for the low engagement contrast. Specifically, the overall indirect effect from the high engagement contrast to well-being via increases in need crafting and subsequent need satisfaction was significant ($\beta = .22$, $SE = .06$, $p < .001$). Similarly, the overall indirect effect from the high-engagement group contrast to ill-being through increases in need crafting and subsequent decreases in need frustration was significant ($\beta = -.08$, $SE = .03$, $p = .003$). In contrast, the low engagement contrast

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yielded no significant indirect effects, neither for well-being ($\beta = .08$, $SE = .05$, $p = .125$) nor for ill-being ($\beta = -.03$, $SE = .02$, $p = .109$).

Finally, domain-specific serial indirect effects LCMs¹ yielded a similar pattern in the school and leisure domain. In the school domain (see Figure 2), the indirect effect for the high-engagement group relative to the control group was significant ($\beta = .19$, $SE = .07$, $p = .009$). A smaller but still significant indirect effect was also observed for the low engagement contrast ($\beta = .15$, $SE = .07$, $p = .042$). In the leisure domain, the indirect effect was significant for the high engagement contrast ($\beta = .19$, $SE = .08$, $p = .015$), whereas no indirect effect was observed for the low engagement contrast ($\beta = -.03$, $SE = .10$, $p = .791$).

Discussion

Grounded in SDT (Ryan, 2023) and aligned with a positive psychology perspective (Csikszentmihalyi & Seligman, 2000), the present study evaluated the effectiveness of an intervention designed to train adolescents in need crafting – the skill to proactively recognize and seek out experiences that satisfy one's basic psychological needs for autonomy, competence, and relatedness. To this end, 299 adolescents were randomly assigned to either a six-session online intervention or a passive control condition, with assessments at baseline, post-intervention, and a two-week follow-up. Given the promising associations between need crafting and mental health outcomes (Laporte et al., 2021; 2022; van den Bogaard et al., 2025), need crafting represents a particularly relevant intervention target, positioning adolescents as proactive agents who actively shape their day-to-day activities and relationships rather than merely responding to their environment. By examining intervention effects across multiple life domains, namely school, leisure, and social media, the present study also speaks to the potential of need crafting as a trans-contextual skill that may foster resilience across changing developmental conditions (e.g., emergence of new technologies, shifting peer norms, changes in academic demands).

Effectiveness of the Intervention on General Mental Health Outcome

¹ Given the lack of significant effect (Hypothesis 1, 2) no serial mediation model is presented for the social media domain.

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The findings are largely consistent with the reported effects of similar interventions among adults (Laporte et al., 2024) and higher education students (van den Bogaard et al., 2024, 2025) and extend these findings to an adolescent-tailored version of the program. Three overarching findings replicated prior work: (1) the intervention successfully increased need crafting (i.e., hypothesized mechanism of change) and need satisfaction (i.e., primary outcome), (2) program engagement played a crucial role in intervention effectiveness, and (3) the hypothesized sequential process was confirmed through the serial indirect effects model.

Specifically, having gone through the intervention, adolescents showed more favorable changes in general need crafting and need satisfaction from pre- to post-measurement compared to those in the control condition. However, only participants who engaged more actively with the program (i.e., who completed more than four of the daily modules) differed significantly from the control group, whereas those with lower engagement did not. These effects were maintained for at least two weeks after the intervention as the gains observed during the intervention phase did not decrease by the time of the follow-up assessment. This pattern is consistent with findings from positive psychology interventions, which show that intervention-induced gains are typically maintained rather than further amplified at follow-up (Martínez-Martínez et al., 2025). In addition, the findings should be interpreted against the backdrop of the average developmental trends in the outcomes. More precisely, mean-level changes from pre- to post-intervention, as well as from post-intervention to follow-up, showed that adaptive variables (need crafting, need satisfaction, well-being) decreased or remained stable, whereas maladaptive variables increased or stayed stable. Rather than acting as a facilitator of continued growth, LifeCraft therefore functioned primarily as a buffer, protecting participants against an average trend of worsening development observed in the control group. This interpretation is further supported by the timing of the measurements: the post- and follow-up assessments partly overlapped with the weeks leading up to adolescents' exams, a period known to challenge psychological need satisfaction and well-being (Campbell, Soenens, et al., 2018).

Finally, analyses indicated indirect effects of the program on the mental health outcomes via a chain of intervening mechanisms: intervention-induced increases (or less pronounced decreases) in need crafting were associated with higher need satisfaction and lower need frustration, which in turn related

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to higher well-being and lower ill-being, respectively. Together, these findings support the role of need crafting as the key mechanism through which the intervention influenced adolescents' psychological functioning. Extending prior work among adults (Laporte et al., 2024) and higher education students (van den Bogaard et al., 2024, 2025), these results provide the first evidence that need crafting is a trainable skill among adolescents, with positive repercussions for their mental health.

Not all findings, however, were consistent with prior work. First, whereas prior studies among adults – albeit only among highly engaged participants (Laporte et al., 2024) – and university students observed program-induced decreases in need frustration, no such effects emerged in the present study, neither for the overall program effect nor for the program engagement contrasts. Second, the present LifeCraft intervention among adolescents did not yield direct effects on the secondary outcomes, that is, on well-being and ill-being. Although well-being and ill-being represent more distal outcomes, which typically require more time to change than the more proximal outcomes targeted by the intervention (Klasnja et al., 2015), this finding contrasts with results among adults (Laporte et al., 2024) and one of two trials among university students (van den Bogaard et al., 2024).

This variability across studies may partly reflect differences in study context: two of the previous LifeCraft interventions (with adults and university students) were conducted during the COVID-19 pandemic, a period of heightened psychological distress that may have left greater room for intervention-induced improvements in well-being. This observation aligns with a broader pattern in the positive psychology literature, where interventions tend to yield stronger effects among individuals who are at greater risk for mental health problems (Bolier et al., 2013). The context of the present study is more similar to van den Bogaard et al. (2024), who also examined the effectiveness of LifeCraft in the period leading up to exams (albeit among university students). These weeks before the exams are also a period of heightened stress. Yet, unlike university students, who typically have a dedicated exam preparation period without regular classes, students in secondary education must prepare for exams while continuing to attend classes, leaving fewer opportunities for self-directed or preferred activities. Moreover, although adolescents have greater decision-making autonomy than younger children (Lionetti et al., 2018), they remain subject to substantially more parental monitoring than emerging adults (Hill & Blokland, 2023), and arguably even more during exams, further limiting their freedom to craft their needs. As such, rather

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than creating space for need crafting, the exam period may have introduced an additional source of pressure for some adolescents, potentially offsetting some of the intervention's benefits. Consistent with this reasoning, up to 35.2% of participants in the experimental group raised homework or studying for exams as a hinderance for completing the homework assignments. Lastly, although the core components of the LifeCraft interventions are similar across studies, other study characteristics, including differences in sample size, recruitment strategies, and intervention timing (see Table S6, supplementary materials, for an overview), may also have contributed to the observed variability in findings. Together, these factors offer a tentative account of why the present study only partially replicated the effects observed in prior need crafting interventions.

Domain-Specific Effects in Leisure, School and Social Media

In the domain-specific analyses, we focused exclusively on the “bright pathway” of the model, examining changes in need crafting, need satisfaction, and well-being in the school, leisure and social media domain. Examining intervention effects across three life domains served three purposes. First, it allowed for an internal replication of the intervention effects across different contexts. Second, it provided insight into the domains in which adolescents spontaneously applied the recommended intervention strategies. Third, it allowed examining whether need crafting interventions can strengthen adolescents’ psychological functioning across multiple life domains, which is theoretically important from a preventive perspective given that adolescents continuously navigate changing contexts and life circumstances.

School and Leisure Domain

Consistent with the findings from the general-level models, the domain-specific analyses indicated that direct intervention effects emerged for need crafting and need satisfaction in the school and leisure domains, where the serial pattern of indirect effects was replicated as well. These effects were again driven primarily by adolescents who actively engaged with the intervention challenges. No effects were found for the social media domain. Taken together, the effects observed across the school and leisure domains suggest that the benefits of need crafting training are not limited to a single life context but extend to domain-specific well-being outcomes across multiple life domains, thereby

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broadening this growing line of work on need crafting (van den Bogaard et al., 2026) and highlighting need crafting as a trans-contextual skill.

At the same time, some findings warrant further consideration. Notably, in the intervention group, leisure-specific need crafting and school-specific need satisfaction decreased from post-intervention to follow-up, suggesting a potential counterproductive effect. Importantly, however, this pattern was not observed among highly engaged participants, suggesting that it may be specific to those with lower program engagement. A possible interpretation is that low-engaged participants, who were exposed to some components of the intervention (i.e., psychoeducation, reflection, and initial action planning) but did not consistently commit to entire program, may have developed greater awareness of the importance of need crafting without consistently translating this awareness into action. This may have increased the perceived discrepancy between their current experiences and their desired level of need satisfaction, which could help explain why low-engaged participants sometimes reported less favorable outcomes than those in the control group. Alternatively, these effects might partly reflect pre-existing differences between engagement groups at baseline. Indeed, less engaged participants reported significantly lower need crafting and need satisfaction compared to the high engaged participants. These baseline differences suggest that lower-engaged adolescents may have represented a more vulnerable subgroup who may require more intensive or personalized support during the intervention.

Social Media Domain

A notable finding of the present study was that the intervention effects observed in the other domains were not replicated in the social media domain. This absence of effects suggests that training adolescents in general need crafting may not automatically transfer to how they navigate online contexts such as social media. This may indicate that some adolescents do not perceive social media platforms as equally important sources of need satisfaction as other life domains or feel less affinity with them more generally (see also Van de Castele et al., 2023). From an SDT perspective, this finding may be in line with the organismic dialectical growth tendency, the inherent human propensity to direct energy toward contexts that are most conducive to growth and need satisfaction (Ryan & Vansteenkiste, 2023). In other words, adolescents may have intuitively prioritized domains where need crafting felt most meaningful and attainable, which in itself represents an adaptive motivational process.

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This interpretation should be nuanced, however, as the effects reported here reflect group-level statistics that inevitably mask individual differences. Consistent with prior research showing considerable heterogeneity in adolescents' experiences of the opportunities and risks associated with social media use (e.g., Beyens et al., 2021), social media may represent an equally or even more important source of need satisfaction for some adolescents, for whom crafting needs in this domain may be both relevant and beneficial. A complementary explanation relates to the nature of the domains themselves. School and leisure contexts represent more universal domains of adolescents' daily lives, which may make them more suitable targets for preventive interventions. Supporting this reasoning, the unconditional models indicated mean-level changes in the school and leisure domains, whereas no comparable mean-level changes were observed in the social media domain; variability in change over time was more limited in the social media domain. This might suggest that there was less room for within-person change during the study period, and thus fewer opportunities to detect intervention-related effects (see Table S5).

Alternatively, these findings might suggest that a more targeted social media need crafting intervention may be warranted. Three directions might be worth exploring. A first option would be to adapt the current intervention to include more explicit attention to social media as a need crafting domain, for instance by incorporating concrete examples and challenges such as consciously curating one's feed, actively engaging with content aligned with personal interests, or initiating more meaningful interactions with peers. A second direction concerns need frustration rather than need satisfaction. Need crafting as currently conceptualized focuses primarily on maximizing need satisfaction, yet the central challenge in the social media context might be more about avoiding or coping with need frustration, for example by unfollowing certain profiles or developing coping skills when confronted with potentially harmful content (e.g., exposure to idealized or extreme content). A third direction draws on research regarding the balance between online and offline need-based experiences (Van de Castele et al., 2025). Person-centered profile analyses among higher education students suggest that combining online and offline need crafting is associated with broader mental health benefits, whereas online crafting alone primarily predicts online well-being outcomes. Notably, only a small minority of participants (12%) engaged in such combined crafting, suggesting that future interventions might explicitly target the

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interplay between online and offline need crafting, for instance by helping adolescents recognize how strengthening need satisfaction in offline domains may indirectly reduce problematic social media engagement or limit interference with offline goals such as schoolwork, sport, or face-to-face interactions. Whether such targeted approaches can be effectively integrated into brief online interventions remains an important avenue for further research.

Limitations and Future Directions

The present findings add to the growing literature on need crafting and positive psychology interventions more broadly, providing the first evidence that need crafting can be trained among adolescents, a finding that is particularly meaningful given that adolescence represents a formative window for cultivating need crafting as a lifelong skill (Laporte et al., 2021; Soenens & Vansteenkiste, 2023). Several limitations should be acknowledged, however. First, the timing of the intervention and follow-up may have influenced the observed effects. As discussed earlier, the post- and follow-up assessments overlapped with the period leading up to adolescents' exams, potentially constraining opportunities for need crafting and limiting the detection of well-being effects. Future research would benefit from implementing need crafting interventions at neutral points in the academic calendar to disentangle intervention effects from contextual stressors. Moreover, the follow-up period was relatively short compared to prior need crafting interventions (Laporte et al., 2024; van den Bogaard et al., 2024, 2025); longer follow-up assessments would allow for a more robust evaluation of whether intervention gains are maintained or erode over time, and whether effects on more distal outcomes such as well-being and ill-being emerge at later time points. Second, the present study was implemented as a self-guided online intervention, with undergraduate students assisting with participant recruitment and follow-up. Although a standardized manual was provided to these students, variability in how they encouraged participation and monitored progress may have introduced engagement-related variability unrelated to the intervention content itself. Future studies could address this by using more standardized recruitment procedures or by embedding the intervention within existing school structures or counselling practices (i.e., hybrid version of the intervention), which may also facilitate reach among lower-engaged adolescents. A further limitation concerns the measurement and modeling of need-based experiences. In the general-level analyses, need satisfaction was operationalized as a composite score derived by

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aggregating the need satisfaction scales across the three domains. As such, this measure does not reflect a purely domain-general construct. In contrast, domain-specific measures that were used were also brief, with need crafting assessed using only three action items and well-being using three vitality items per domain. While these decisions were well-considered to reduce participant burden, future research would benefit from more comprehensive and psychometrically robust domain-specific measures, as well as a distinct domain-general need crafting assessment. Addressing these measurement limitations in future work would allow for a more precise understanding of the mechanisms through which need crafting interventions exert their effects. A final limitation concerns the demographic composition of the sample. Although nationality was assessed, race and ethnicity were not measured, which limits the generalizability of the findings to more diverse adolescent populations and precludes examination of potential differential effects across racial and ethnic groups.

Conclusions

The present study shows that need crafting can be trained in adolescence and may serve as a promising pathway to support mental health. In line with the principles of positive psychology, this program has the potential to foster positive development rather than merely reducing symptoms. Domain-specific effects were found in the school and leisure domains, but not in the social media domain, suggesting that adolescents are less spontaneously inclined to apply need crafting to the social media domain than to offline domains. Together, these results underscore the potential of need crafting as a preventive, trans-contextual skill that may equip adolescents to navigate diverse and evolving life domains – though the extent to which this potential generalizes across all contexts, including social media, warrants further investigation.

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Tables and Figures

Table 1*Correlations between the Assessed study variables at Different Time Points*

	1a.	2a.	3a.	4a.	5a.	1b.	2b.	3b.	4b.	5b.	1c.	2c.	3c.	4c.
T1: Baseline														
1a. Need Crafting														
2a. Need Satisfaction	.53***													
3a. Need Frustration	-.35***	-.50***												
4a. Well-being	.51***	.55***	-.55***											
5a. Ill-being	-.38***	-.48***	.59***	-.71***										
T2: Post-intervention														
1b. Need Crafting	.57***	.46***	-.31***	.31***	-.30***									
2b. Need Satisfaction	.41***	.63***	-.42***	.47***	-.44***	.61***								
3b. Need Frustration	-.24***	-.36***	.59***	-.41***	.53***	-.45***	-.62***							
4b. Well-being	.38***	.45***	-.40***	.60***	-.54***	.48***	.62***	-.59***						
5b. Ill-being	-.30***	-.39***	.51***	-.62***	.75***	-.35***	-.49***	.60***	-.75***					
T3: Follow-up														
1c. Need Crafting	.42***	.37***	.12	.44***	-.35***	.54***	.45***	-.36***	.44***	-.37***				
2c. Need Satisfaction	.39***	.58***	-.32***	.38***	-.43***	.58***	.71***	-.49***	.56***	-.47***	.64***			
3c. Need Frustration	-.18**	-.31***	.41***	-.30***	.44***	-.43***	-.52***	.68***	-.46***	.45***	-.42***	-.63***		
4c. Well-being	.27***	.37***	-.27***	.51***	-.52***	.36***	.43***	-.44***	.63***	-.59***	.59***	.60***	-.49***	
5c. Ill-being	-.26***	-.44***	.49***	-.55***	.74***	-.33***	-.46***	.54***	.61***	.80***	-.47***	-.55***	.52***	-.68***

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

Table 2

Latent Change Analyses: Effects of Condition (Hypothesis 1) and Program Engagement (Hypothesis 2) on Change in the Study Variables

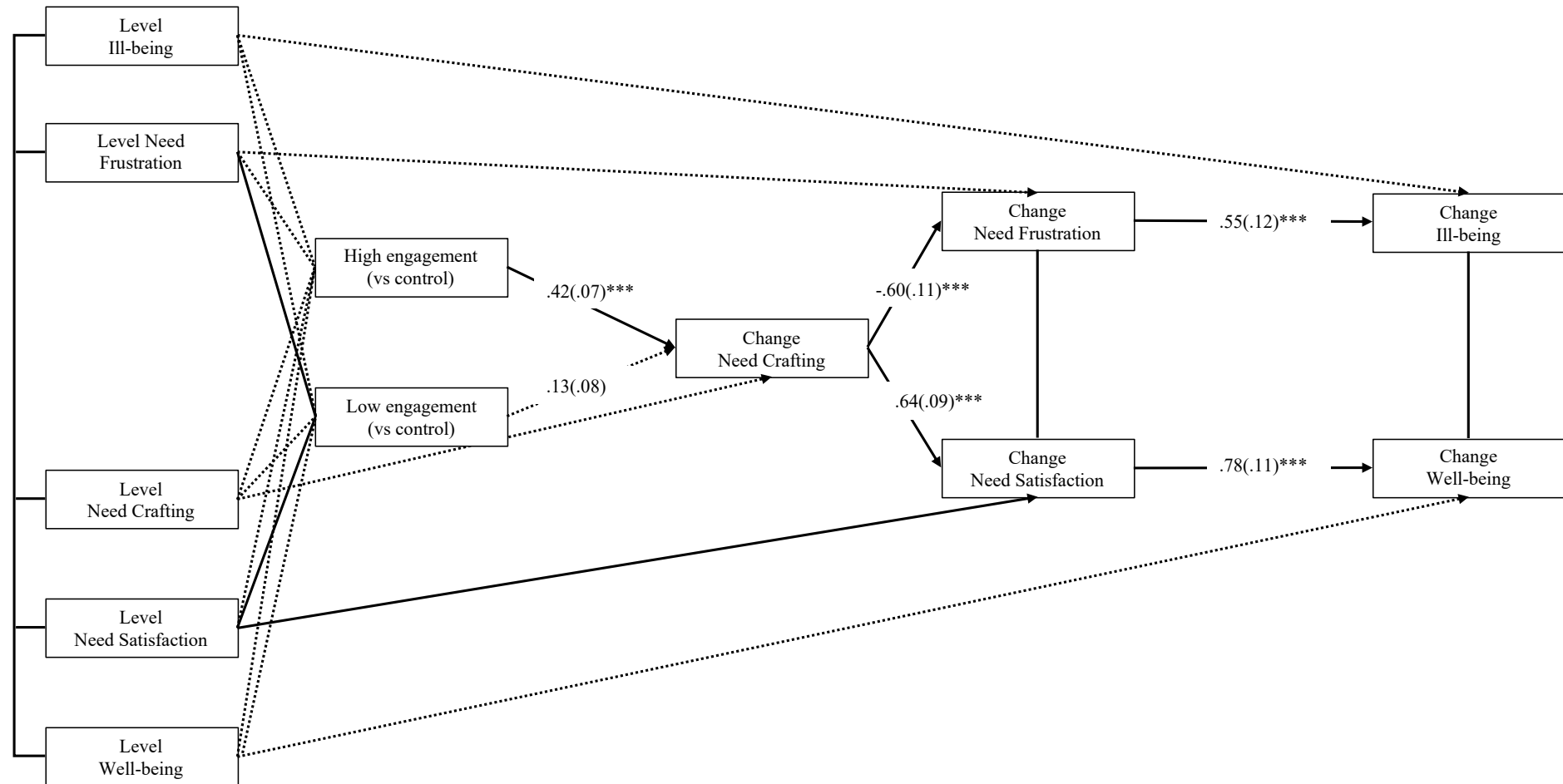
	Change T1-to-T2					Change T2-to-T3						
	Hypothesis 1: condition		Hypothesis 2: engagement			Hypothesis 1: condition			Hypothesis 2: engagement			
	Level	Condition	Level	High	Low	Level	Cha T1-T2	Condition	Level	Cha T1-T2	High	Low
	$\beta(SE)$	$\beta(SE)$	$\beta(SE)$	$\beta(SE)$	$\beta(SE)$	$\beta(SE)$	$\beta(SE)$	$\beta(SE)$	$\beta(SE)$	$\beta(SE)$	$\beta(SE)$	$\beta(SE)$
General												
Need crafting	-.16(.11)	.38(.07)** *	-.23(.10)*	.50(.07)** *	.14(.09)	-.18(.09)*	-.27(.12)*	.07(.09)	-.17(.10)	-.22(.15)	.06(.11)	.04(.09)
Need satisfaction	-.43(.10)***	.16(.06)**	-.44(.10)***	.18(.07)**	.10(.06)	-.10(.12)	-.28(.12)*	-.05(.08)	-.10(.12)	-.29(.12)*	-.03(.09)	-.08(.09)
Need frustration	-.38(.10)***	-.07(.07)	-.39(.10)***	-.10(.08)	.00(.07)	-.33(.15)*	-.05(.16)	-.03(.10)	-.30(.16)	.01(.19)	-.06(.10)	.04(.11)
Well-being	-.20(.10)*	-.07(.08)	-.21(.10)*	.12(.09)	-.03(.08)	-.38(.11)***	-.43(.12)***	.06(.09)	-.40(.10)***	-.43(.12)***	-.03(.09)	-.12(.10)
Ill-being	-.31(.11)**	-.01(.07)	-.31(.11)**	-.06(.08)	.08(.08)	-.17(.14)	-.42(.14)**	-.03(.10)	-.17(.14)	-.40(.14)**	.02(.11)	-.12(.11)
School Domain												

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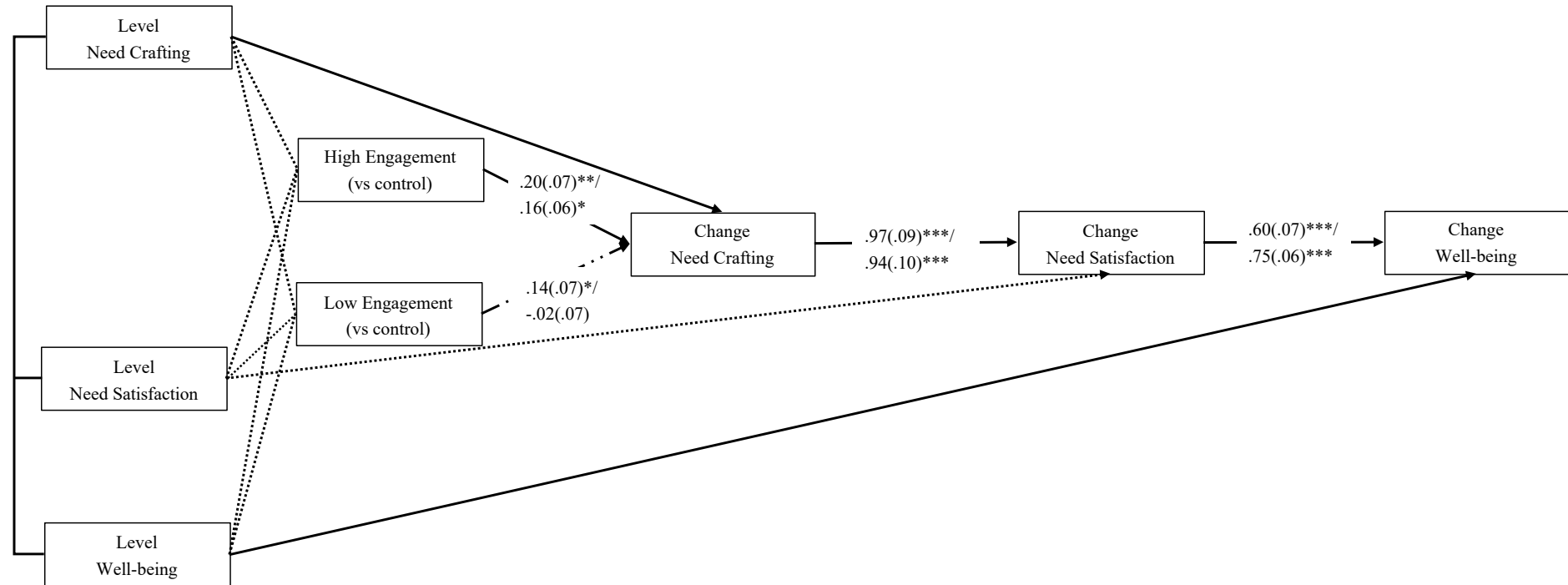
Need crafting	-	.17(.07)*	-.46(.09)***	.19(.08)*	.12(.08)	-.34(.11)**	-	-.03(.08)	-.36(.11)**	-	.03(.08)	-.12(.10)
		.46(.10)***						.52(.11)***		.53(.11)***		
Need	-	.19(.07)**	-.39(.09)***	.20(.08)**	.13(.07)	-	-	-.09(.07)	-.43(.08)***	-	-	-
satisfaction		.38(.09)***				.42(.09)***	.35(.10)***			.36(.10)***	.02(.08)	.20(.07)*
												*
Well-being	-	.04(.06)	-.46(.06)***	.06(.07)	-.02 (.06)	-	-	-.01(.07)	-.33(.08)***	-	.02(.07)	-.05(.10)
		.45(.06)***				.32(.08)***	.39(.10)***			.40(.10)***		
Leisure												
Domain												
Need crafting	-	.04(.07)	-.54(.09)***	.14(.06)*	-.11(.07)	-.12(.14)	-.38(.12)**	-.18(.09)*	-.12(.15)	-.39(.13)**	-	-.23(.12)+
		.53(.09)***									.13(.09)	
Need	-	.14(.06)*	-.58(.08)***	.17(.07)*	.06(.06)	-.05(.14)	-.40(.15)**	-.16(.09)	-.05(.14)	-.40(.15)**	-	-.15(.09)
satisfaction		.57(.08)***									.13(.09)	
Well-being	-	.02(.06)	-.50(.06)***	.04(.06)	.00(.06)	.15(.10)	-	-.05(.07)	-.16(.10)	-	.01(.07)	-.12(.09)
		.50(.05)***					.62(.07)***			.62(.07)***		
Social media Domain												
Need crafting	-.54(.16)**	.08(.10)	-.55(.16)**	.17(.11)	-.02(.12)	-.08(.22)	-	.13(.09)	-.09(.22)	-.35(.28)	.14(.10)	.09(.10)
							.32(.28)***					
Need	-	.04(.07)	-.44(.09)***	.08(.07)	-.01(.08)	-.22(.10)*	-	.12(.07)	-.22(.10)*	-	.11(.08)	.11(.08)
satisfaction		.43(.09)***					.61(.13)***			.61(.13)***		
Well-being	-	.03(.06)*	-.50(.06)***	.02(.07)	.04(.06)	-.23(.09)**	-.49(.15)**	.12(.07)	-.22(.09)*	-.48(.15)**	.08(.07)	.16(.10)
		.50(.06)***										

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

Figure 1

Structural Serial Mediation Model for General Study Variables

Note. All parameter estimates are standardized. Standard Errors are presented between brackets. p values are two-tailed. *** $p < .001$ ** $p < .01$ * $p < .05$. Model fit: CFI = .925, RMSEA = .052, SRMR = .089.

Figure 2*Structural Serial Mediation Model School and Leisure Variables*

Note. School variables are presented before the slash; leisure variables are presented after the slash. All parameter estimates are standardized. Standard Errors are presented between brackets. p values are two-tailed. *** $p < .001$, ** $p < .01$, * $p < .05$; School domain model fit: CFI = .890, RMSEA = .062, SRMR = .078. Leisure domain model fit: CFI = .920, RMSEA = .048, SRMR = .069.