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Research Article

Predicting College Students Lack of Longevity Promotion: From Family-of-origin chaos, through Current Unmet Interpersonal Needs, to Life-Diminishing Behavior

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Abstract

Identifying modifiable predictors of life-diminishing behaviors is paramount for health professionals seeking to promote the probability of longevity among young adults who can be at risk for suicide, overdose, and accidental injury and death. Family-of-origin experiences and unmet interpersonal needs are well-known risk factors for suicide; however, they have yet to be tested as predictors of a broad array of life-diminishing behaviors. College student participants (*N*=522, M=19.6 years) who were majority female (66.7%) and diverse (57.3% White) completed measures of family-of-origin chaos, interpersonal needs, and engagement in four types of life-diminishing behaviors as measured via the Life-Attitudes Schedule: Short Form (LAS:SF). The LAS:SF assesses engagement in both potentially life-diminishing as well as potentially longevity-promoting behaviors; the overall construct assessed has been labelled lack of longevity promotion or suicide proneness. As expected, a history of greater family-of-origin chaos and current unmet interpersonal needs were associated with overall LAS:SF scores with medium effect sizes. Furthermore, the interaction between perceived burdensomeness and thwarted belongingness mediated the relationship between family-of-origin chaos and total LAS:SF scores, accounting for 20% of the variance in college students' lack of longevity promotion. Importantly, the model held for each of the four lack of longevity proneness/suicide proneness domains (Lack of Health/Illness Promotion, Lack of Safety/Risk Promotion, Lack of Future Orientation/Death or Suicide Promotion, and Lack of Self-Promotion) and across multiple demographic groups. Assessing and addressing interpersonal needs is an emerging intervention target for those seeking to improve at-risk young adults' well-being while promoting longevity and preventing suicide and accidental death.

Keywords

Life-diminishing behaviors, Wellness Promotion, Interpersonal Needs, Family-of-origin Chaos, Young Adults.

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Introduction

Young adults in general, and college students in particular, have repeatedly been shown to be prone to exhibit a lack of life promoting behaviors, which has, in turn, been associated with a higher probability of early death due to a variety of causes (e.g., suicide, accident, illness) [1,2]. College students also anticipate engaging in, and do engage in, a variety of risky and potentially life-diminishing behaviors [3-5]. Preventionists have asserted these potentially life-shortening or life-diminishing behaviors should be addressed by campus healthcare providers to enhance college students' well-being [6,7]. However, many prevention efforts directed at college students are siloed by type of risk behavior (e.g., suicide; problematic substance use; relationship violence; lack of sport safety). Importantly, a well-validated measure, the Life-Attitudes Schedule: Short Form (LAS:SF) offers the ability to identify young adults at risk for a variety of life-diminishing behaviors, as the overall construct assessed by the LAS:SF is a lack of commitment to promoting longevity or a behavioral propensity for suicide proneness [8]. Specifically, the LAS:SF assesses thoughts, feelings, and actions (which are combined to determine behaviors) from four interconnected but discrete life-diminishing domains: Death and suicide-related: Injury and risk-related; Lack of health and illness-related, and Lack of self-support or poor ego-strength related. Importantly, this measure was constructed with items designed to assess the absence of a behavioral commitment to longevity, safety, health, and self-care as well as the presence of self-harming, risky, illness-promoting, and self-diminishing behaviors. Thus, the LAS:SF total score offers an essential assessment of college students' overall lack of wellness or their poor commitment to longevity [9,10]. Uniquely, the measure's emphasis on four discrete domains also provides healthcare professionals with vital insight into college students' specific health and well-being behaviors. Namely, in each previous study of the LAS:SF, the four underlying domains functioned as separate but essential pillars of the overall construct, providing evidence for the utility of considering each of the four subscales of the measure separately, while also utilizing the total score as a measure of lack of longevity proneness or as originally conceptualized by the authors of the measure, suicide proneness or life-diminishment [8,10].

Family-of-Origin Chaos

Adverse family-of-origin experiences have consistently been shown to be risk factors for a variety of future life-diminishing behaviors including suicidal behaviors, alcohol misuse, and drug misuse [11-13]. However, existing studies have typically considered the impact of one specific adverse childhood experience (ACE) such as experiencing child sexual abuse or coming from a home characterized by parental alcoholism, rather than broader family factors or the family milieu. Recently, researchers have suggested that the general tenor of the family home is an important transdiagnostic risk factor. Specifically, family-of-origin chaos, or the absence of stability, routine, and structure in early life, has been proposed as a central dynamic underlying future engagement in life-diminishing behaviors [14,15]. Examples of family-of-origin chaos include homes that lack daily life routines or important family rituals. These homes often have high commotion, tension, overcrowding, and unpredictability; children in these homes also tend to have less parental monitoring and involvement. Lack of parental monitoring has known associations with greater risk-taking by youth [16,17]. Thus, it is hypothesized that greater family of origin chaos will be significantly associated with a lack of longevity promotion among college students. Furthermore, being raised in a home characterized by chaos theoretically increases the likelihood of developing feelings of being a burden to one's family and not belonging socially or interpersonally; these unmet needs are known risk factors for suicidal behaviors [18,19]. However, the relationships among family-of-origin chaos, current unmet interpersonal needs of burdensomeness and lack of belongingness, and an overall lack of longevity promotion is unknown. This gap is addressed in the current study in a large sample of college students.

Interpersonal Needs

Specifically, the Interpersonal Theory of Suicide (ITS) highlights the importance of two critical unmet interpersonal needs in promoting suicidality: thwarted belongingness and perceived burdensomeness [18,19]. Thwarted belongingness refers to the cognitive-affective state resulting from a lack of connection with others. Perceived burdensomeness is the false belief that one is a burden on others. Joiner [18] and Van Orden and colleagues [19] theorize that it is the interaction of these two unmet interpersonal needs that increases the risk for suicidal ideation. Given this, we assert that thwarted belongingness and perceived burdensomeness will also emerge as transdiagnostic risk factors for the overall construct of lack of longevity promotion (i.e., as measured by overall LAS-SF scores) and well as for engagement in each of the four discrete types of life-diminishing behaviors measured via the LAS:SF.

Additionally, we proposed that college students who hold marginalized identities may be at an elevated risk for experiencing these unmet interpersonal needs, thereby increasing their risk for engagement in lack of longevity promotion [20,21]. This assertion is supported by the recent work of Shepherd and colleagues [21] who reported significant associations between holding a marginalized identity and reporting greater thwarted belonging and perceived burdensomeness. In the current study, marginalized identity was assessed through self-reported Black, Indigenous, or Person of Color (BIPOC) identity.

Present Study

In summary, we hypothesized that: (1) Greater self-reported family-of-origin chaos (CHAOS) will positively correlate with reports of greater unmet interpersonal needs (Interpersonal Needs Questionnaire, INQ-15; total score), as well as with both INQ-15 subscales (perceived burdensomeness, thwarted belongingness). (2) Greater family-of-origin chaos (CHAOS) will also positively correlate with an overall lack of commitment to longevity promotion (LAS:SF total scores) and with all four subscales of the LAS:SF (death-related, health/illness-related, injury/risk-related,

self-related life-diminishment). (3) The INQ-15 (total score and both subscales) will be significantly associated with overall LAS:SF scores and all four LAS:SF subscales. (4) Consistent with ITS, we expected that the interaction between perceived burdensomeness and thwarted belongingness would mediate the relationship between family-of-origin chaos and lack of longevity promotion as measured by the LAS:SF. A priori, this mediation model was expected to be significant for all four content subscales of the LAS:SF. It was also expected to hold for multiple groups of college students (males/females, white/BIPOC) with the potential for explaining more variance in the life-diminishing behavior of those holding marginalized (BIPOC) versus non-marginalized identities (white).

Materials and Methods

Procedures

This study utilized a cross-sectional design whereby college students enrolled at a large, diverse university in the Southeastern United States anonymously completed an online battery of questionnaires via a Qualtrics survey. Participants provided informed consent for the study prior to receiving the measures. After completing the survey, participants were debriefed, and all were provided access to both on and off-campus mental and physical health resources. The University's Institutional Review Board (IRB) IRB-22-0395 approved the survey methodology, and ethical procedures were followed throughout. The measures were designed to assess the student's past experiences (family-of-origin chaos), current unmet needs (perceived burdensomeness, thwarted belongingness), and lack of longevity proneness through scores on the LAS:SF.

Participants

This study recruited participants ($n = 522$) through the participating university's undergraduate psychology student subject pool (SONA). Participants earned credit in their psychology course for their voluntary and anonymous participation. Other options to receive course credit were readily available, and all questions on the survey could remain unanswered based on the participants' choices. Thus, *n*'s vary slightly across analyses.

Measures

Demographics

Participants answered ten demographic questions: age, sex at birth, gender identity, sexual orientation, race, ethnicity, school classification, and their biological parents' current marital status.

Family-of-Origin Chaos

Family chaos was measured via the Confusion Hubbub and Order Scale (CHAOS) [16]. CHAOS is a 15-item self-report measure in which participants are prompted to think back to the home in which they primarily grew up. Participants then responded yes if an item was characteristic of their family environment or no if the item was not characteristic. Items assess their family-of-origin home's overall structure and atmosphere, including: "It is a real zoo in our home" and "No matter how hard we try, we always seem to be running late." Higher scores indicate greater family-of-origin household chaos. This measure has demonstrated good validity across studies [17]. In the current sample, the reliability coefficient for CHAOS was also very good ($a = .86$).

Current Unmet Interpersonal Needs

Perceived burdensomeness and thwarted belongingness were measured using the Interpersonal Needs Questionnaire-15 (INQ-15). The INQ-15 consists of 15 items with answer choices ranging from 1 (not at all true for me) to 7 (very true for me). An example of an item used to assess perceived burdensomeness is, "These days, people in my life would be better off if I were gone." An example item to assess thwarted belongingness is "These days, I feel disconnected from other people." Higher scores indicate greater perceived burdensomeness and a decreased sense of belongingness. The INQ-15 is a well-validated measure [22]. In this sample, the overall reliability coefficient for the INQ-15 was excellent ($a = .91$). For the Perceived Burdensomeness (PB) subscale, the reliability alpha was excellent at .95. It was also very strong ($a = .82$) for the Thwarted Belongingness (TB) subscale.

Overall Life-Diminishment or Lack of Longevity Proneness

Lack of Longevity Proneness (i.e., greater thoughts, feelings, actions that are associated with risk, illness, death, or life-diminishment) was assessed via the Life Attitudes Schedule - Short Form (LAS:SF) [23]. The LAS:SF consists of 24 items rated on a 4-point Likert scale ranging from "Strongly Agree" to "Strongly Disagree." Items assess participants' engagement in life-diminishing (12 items) and lack of engagement in life-enhancing or longevity behaviors (12 items, reverse scored). Behavior was defined to include thoughts, feelings, and actions. Example items include "I look forward to a long life" and "I avoid unnecessary risks." Higher scores indicate decreased activity in support of one's health and potential longevity or increased life-diminishment or death/suicide proneness. The LAS:SF has consistently been shown to be a valid and reliable measure in adolescent, young adult, and college student samples [23-25]. For the current study, one item on the LAS:SF was updated by removing a dated reference to Ozzy Osbourne's death-related music. As has been found previously, the coefficient alpha for the overall LAS:SF in this sample was strong ($a = .87$).

To test the hypotheses advanced in this study, the LAS:SF was scored into its four content subscales ($n = 6$ items each). The coefficient alpha for these smaller subscales were mostly acceptable to good: death-related, $a = .73$; injury-related, $a = .62$; and self-related $a = .76$. However, the internal consistency of the health-related scale, $a = .52$, was lower than anticipated. Further analyses indicated that removing the one binge-drinking item from the health-related subscale would substantially increase the coefficient alpha of this subscale. However, we chose to retain this item in the current study to maintain consistency across publications with this measure and to stay aligned with the LAS:SF scoring manual. Binge drinking is also a well-known risk behavior that is not expected to

promote longevity among college students.

Statistical Analysis

All participant data with less than 70% survey completion and lower than a 10-minute survey response rate were removed from future analyses, leaving a final *n* of 522 college students. For all analyses examining demographic variables and due to the small sample sizes of some groups, race and self-reported sex were re-coded dichotomously. Race was re-coded into white versus Black/Indigenous/people of color (BIPOC). Self-reported sex was re-coded into male versus female. To test hypotheses 1 through 3, Pearson bivariate correlations were conducted among the constructs of interest utilizing the total sample. Hypothesis 4 was tested using PROCESS Model 4 for SPSS. This model consisted of family-of-origin chaos as the X (predictor) variable, the interaction between thwarted belongingness and perceived burdensomeness scores as the mediator (M), and LAS:SF total scores as the Y (outcome) variable. The same mediation analysis was repeated four times using each of the four LAS:SF subscales as outcomes. Finally, a set of analyses was conducted to determine if the mediation analyses were significant and explained similar amounts of variance for several subgroups (white, BIPOC, men, women).

Results

Demographics

The mean age of participants was 19.6 years old (*SD* = 2.9). Among the participants, 66.7% (*n* = 348) reported being assigned the female sex at birth. For race, 57.3% (*n* = 299) of participants self-reported being White, and 22.4% (*n* = 117) self-identified as Black, African American, or Afro-Caribbean. As shown in Table 1, the remaining participants endorsed a variety of other races. Participants' parents' marital status was reported as currently married or in a domestic partnership for 62.3% (*n* = 325) of the sample; 21.3% (*n* = 111) indicated their parents were divorced or currently divorcing. The sexual orientation of the sample was primarily reported as exclusively heterosexual, 72.2% (*n* = 377). Complete demographic information for the sample is presented in Table 1.

Table 1: Sample Descriptors.

Variable	*M*	*SD*	*n*	%
Age	19.58	2.94		
Sex at Birth				
Male			173	33.2
Female			348	66.8
Race				
White			299	57.3
African American/Black/Afro-Caribbean			117	22.4
Multiracial/Biracial			37	7.1
East Asian/East Asian American			22	4.2
Middle Eastern/Arab/North African			9	1.7
Native Hawaiin/Pacific Islander			5	1.0
South Asian/South Asian American			37	7.1
American Indian/Alaskan Native/First Nations			5	1.0
Other/I choose not to answer			41	7.8
Classification in School				
Freshman			286	55.0
Sophomore			146	28.1
Junior			60	11.5
Senior			28	5.4
Parents' Marital Status				
Together			325	62.3
Divorced/Divorcing			108	20.6
Sexual Orientation				
Heterosexual			377	73.2
Mostly Heterosexual			61	11.7
Bisexual			41	7.9
Asexual			4	0.8
Mostly Homosexual			5	1.0
Exclusively Homosexual			12	2.3
Pansexual			9	1.7
Other/I choose not to answer			13	2.4

Hypothesis Testing

Means, standard deviations, and correlation coefficients among the primary variables are presented in Table 2. As predicted, the central univariate relationships were substantiated as predicted; family-of-origin chaos was significantly correlated with overall unmet interpersonal needs, $r(518) = .35$, $p < .001$, and with overall lack of longevity promotion on the LAS:SF, $r(518) = .45$, $p < .001$. Greater unmet interpersonal needs was also significantly associated with a greater lack of longevity promotion, $r(518) = .57$, $p < .001$.

Table 2: Measure Means and Correlations Among the family-of-origin CHAOS, Perceived Burdensomeness (PB), Thwarted Belongingness (TB), and the LAS:SF and its four subscales for the entire sample.

Variable	*M*	SD	1	2	3	4	5	6	7	8
1. CHAOS	**4.64**	**3.87**								
2. INQ-15	**35.96**	**16.40**	**.35**							
3. PB	10.48	7.44	.38	.82						
4. TB	25.52	11.13	.27	.92	.54					
5. LAS:SF	**45.85**	**10.07**	**.45**	**.57**	**.57**	**.46**				
6. DR	9.82	3.14	.33	.52	.53	.42	.84			
7. HR	12.00	2.77	.29	.26	.27	.21	.69	.41		
8. IR	12.45	3.34	.40	.38	.41	.29	.80	.56	.41	
9. SR	11.59	3.28	.41	.62	.59	.52	.85	.70	.45	.54

Note: Sample sizes vary slightly based on missing data (overall *n* = 522). All correlations are significant at *p<.001*. CHAOS is the Confusion, Hubbub, and Order Scale. INQ-15 is the Interpersonal Needs Questionnaire, PB is the Perceived Burdensomeness subscale, TB is the Thwarted Belongingness subscale. LAS:SF is the Life Attitudes Schedule-Short Form, DR is the Death-Related subscale, HR is the Health-Related subscale, IR is the Injury-Related subscale, and SR is the Self-Related subscale of the LAS:SF. Bold indicates total score.

Importantly, family-of-origin chaos was also significantly associated with all four LAS:SF subscale domains: death/suicide-related, $r(518) = .33$, $p < .001$; health/illness-related, $r(518) = .29$, $p < .001$; injury/risk-related, $r(518) = .40$, $p < .001$; and self-related, $r(518) = .41$, $p < .001$, each with moderate effect sizes. As shown in Table 3, these significant associations held for male and female, and White and BIPOC college students as expected. Likewise, as predicted, greater interpersonal needs were also associated with each of the four distinct LAS:SF domains in the total sample: death/suicide-related, $r(518) = .52$, $p<.001$; health/illness-related, $r(518) = .26$, $p<.001$; injury/risk-related, $r(518) = .38$, $p<.001$; and self-related, $r(518) = .62$, $p<.001$. These significant associations held for both males and females with one exception; the relationship between thwarted belongingness and LAS:SF health/illness-related scores was in the expected direction but non-significant for self-identified male participants, $r(171) = .10$, $p = .20$. All the correlations were in the predicted direction and statistically significant for both White and BIPOC participants.

We then conducted t-tests to determine if there were mean differences in the self-reports of family-of-origin chaos, interpersonal needs, and life-diminishing behaviors between male and female at-birth participants, and White and BIPOC participants. Female college students self-reported greater family-of-origin chaos, $t(376.05) = -3.44$, $p < .001$, Cohen's $d = -.31$, and more perceived burdensomeness, $t(395.11) = -2.26$, $p = .025$ as compared to male college students, Cohen's $d = -.20$. White college students self-reported significantly more life-diminishing behavior across the LAS:SF as compared to BIPOC students, $t(494) = -3.08$, $p = .002$, Cohen's $d = -.28$.

To test hypothesis 4, a multiple regression was first conducted to test for violations of assumptions. There was independence of residuals, with a Durbin-Watson statistic of 2.11. There was homoscedasticity, as assessed via a visual inspection of a scatterplot of studentized residuals versus unstandardized predicted values. There was no evidence of multicollinearity, as assessed via tolerance values greater than .01. The assumption of normality was met via a visual inspection of partial plots, histograms, and Q-Q plots. Thus, the variables were inputted into a PROCESS Model 4 equation using 5000 bootstrapped samples with 95% confidence intervals to test if the effect of family-of-origin chaos on lack of longevity proneness was mediated through the interaction of unmet interpersonal needs as was predicted.

As shown in Table 4, and in support of what was predicted, there were significant indirect effects of unmet interpersonal needs on the relationship between family-of-origin chaos and the LAS:SF total scores, with the overall mediation model accounting for 20% of the variance in college students' overall lack of longevity proneness. Furthermore, the model from family-of-origin chaos to current engagement in life-diminishing behaviors through the mediating process of the interaction of unmet interpersonal needs held for every tested demographic subgroup. However, as shown in Table 5 and consistent with expectation, the mediation model accounted for slightly more variance in life-diminishing behaviors among students who self-reported being female sex at birth (22%), than for those who were male at birth (17%). The model also accounted for more variance among those who endorsed a BIPOC identity (23%) than among college students who self-reported being White (17%). Importantly, additional analyses were conducted to determine if the interaction of unmet needs mediated the relationship between family-of-origin chaos and each of the four types of life-diminishing behavior assessed via the LAS:SF (death-related, health-related, injury-related, self-related). As shown in Table 4, the model was significant for all four LAS:SF domains; however, the amount of variance accounted for differed. The model accounted for 17% of the variance in Self-Related behaviors and 16% of the variance in Injury/Risk-Related Behaviors. For the Death/Suicide-related domain, the model accounted for 11% of the variance. Finally, for the Health/Illness-Related domain, the model only accounted for 8% of the variance.

Table 3: Correlation Statistics for Male-at-birth, Female-at-birth, and White versus BIPOC Participants.

Variable	LAS:SF		DR		HR		IR		SR	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
CHAOS	.41***	.47***	.33***	.47***	.21**	.30***	.34***	.43***	.38***	.42***
INQ	.56***	.58***	.56***	.52***	.16*	.31***	.38***	.38***	.62***	.62***
TB	.42***	.48***	.43***	.42***	.10	.27***	.26**	.30***	.51***	.53***
PB	.59***	.56***	.58***	.52***	.21**	.28***	.46***	.39***	.58***	.59***
	LAS:SF		DR		HR		IR		SR	
	White	BIPOC	White	BIPOC	White	BIPOC	White	BIPOC	White	BIPOC
CHAOS	.41***	.48***	.26***	.41***	.26***	.27***	.37***	.41***	.39***	.41***
INQ	.62***	.56***	.57***	.53***	.29***	.23***	.38***	.42	.68***	.57***
TB	.50***	.45***	.43***	.45***	.25***	.18**	.30***	.33***	.57***	.47***
PB	.62***	.55***	.60***	.50***	.26***	.24***	.40***	.44***	.65***	.54***

Note: Sample sizes vary slightly based on missing data. Male at birth $n = 171$, Female at birth $n = 346$ BIPOC refers to Black/Indigenous/People of Color $n = 229$, White $n = 267$. CHAOS is the Confusion, Hubbub, and Order Scale. INQ-15 is the Interpersonal Needs Questionnaire, PB is the Perceived Burdensomeness subscale, TB is the Thwarted Belongingness subscale. LAS:SF is the Life Attitudes Schedule-Short Form, DR is the Death-Related subscale, HR is the Health-Related subscale, IR is the Injury-Related subscale, and SR is the Self-Related subscale of the LAS:SF. ***$p<.001$, **$p<.01$, *$p<.05$

Table 4: Mediation models of Family Chaos to overall Lack of Longevity Proneness through the interaction of Perceived Burdensomeness and Thwarted Belongingness for the entire sample.

Outcome	Model Paths	Effect (SE)	*t*	F	R^2	Indirect Effect [95%CI]
LAS:SF	A_1	32.13 (3.69)	8.72	75.96	12.83%	.41[.28,.56]
	B_1	.01 (.00)	11.96	154.40	37.49%	
	C'	.74 (.10)	7.73			
	C	1.15 (.10)	11.40	129.95	20.12%	
DR	A_1	32.13 (3.69)	8.72	75.96	12.83%	.13[.08,.19]
	B_1	.00 (.00)	11.39	103.94	28.76%	
	C'	.13 (.03)	4.17			
	C	.27 (.03)	7.90	62.51	10.80%	
HR	A_1	32.13 (3.69)	8.72	75.96	12.83%	.04[.02,.07]
	B_1	.00 (.00)	3.87	30.42	10.57%	
	C'	.16 (.03)	4.94			
	C	.20 (.03)	6.68	44.66	7.97%	
IR	A_1	32.13 (3.69)	8.72	75.96	12.83%	.08[.05,.12]
	B_1	.00 (.00)	6.41	72.96	22.08%	
	C'	.26 (.04)	7.27			
	C	.34 (.03)	9.87	97.33	15.87%	
SR	A_1	32.13 (3.69)	8.72	75.96	12.83%	.15[.10,.21]
	B_1	.00 (.00)	13.66	162.98	38.76%	
	C'	.19 (.03)	6.13			
	C	.35 (.03)	10.12	102.49	16.57%	

Note: all *t* and F statistics were significant at $p<.001$. A_1 path corresponds to the path between the X variable (Family-of-Origin Chaos) and the M (the interaction between perceived burdensomeness and thwarted belongingness). B_1 path corresponds to the path between the M variable and the outcome variable noted in the first column. LAS:SF is the Life Attitudes Schedule-Short Form, DR is the Death-Related subscale, HR is the Health-Related subscale, IR is the Injury-Related subscale, and SR is the Self-Related subscale of the LAS:SF.

Table 5: Mediation Analyses: Predicting life-diminishing behaviors or Lack of Longevity Proneness: Presenting total, direct, and indirect effects separately by subgroup.

		Total Effect			Direct Effect		Indirect Effect
		b (SE)	*t*	R^2	*b (SE)*	*t*	
Suicide Proneness (LAS:SF)	Male	1.09 (.19)	5.81***	16.66%	.67 (.17)	3.87***	.43[.19,.67]
	Female	1.20 (.12)	9.83***	21.92%	.80 (.12)	6.84***	.40[.25,.58]
	White	1.08 (.15)	7.33***	16.84%	.54 (.14)	3.96***	.54[.35,.75]
	BIPOC	1.19 (.15)	8.18***	22.75%	.82 (.14)	5.94***	.36[.21,.54]

Note: ***$p<.001$. Using PROCESS Model 4, Family Chaos (CHAOS) was inputted as the X variable, with Suicide Proneness (LAS:SF) as the Y (outcome) variable and the interaction term of Perceived Burdensomeness and Thwarted Belongingness as the M term (mediator). The model was then conducted using only the selected portion of the total sample based on dichotomous demographic variables. The total mediation model was statistically significant in all analyses, with significant mediation as hypothesized.

Discussion

Reducing and preventing college students' life-diminishing behaviors, including accidental injuries, willing exposure to disease, and suicidality, is a health imperative. Campus healthcare providers are uniquely positioned to aid in risk detection, prevention, and early intervention efforts [26]. The current study adds to the young adult and college student health and wellness literature in three key ways. First, we showcase a unique and broad measure, the LAS:SF, that can provide valuable information for healthcare providers as it provides an overall gauge of college student risk as well as insight into four domains of life-diminishing behavior. Second, we focus on the risk generated from family-of-origin chaos as it expands the conversation beyond the direct effects of specific adverse childhood experiences (ACEs) to consider the general tenor of the home environment. Third, we provide support for our contention that thwarted belongingness and perceived burdensomeness are important transdiagnostic risk factors that predict overall college student wellness and lack of longevity proneness. These unmet interpersonal needs have traditionally been viewed as risk factors for suicidal behavior; however, we extend the literature to show these factors predict college student engagement in a broad array of life-diminishing behaviors. Thus, promoting belongingness and reducing perceptions of burdensome should be essential to prevention and intervention efforts targeting emerging adults.

As predicted through our expanded model, unmet interpersonal needs were shown to have a significant indirect effect on the relationship between family-of-origin chaos and lack of longevity promotion as assessed by the LAS:SF. Twenty percent of the variance in lack of longevity promotion was accounted for. Overall,

our findings provide preliminary support for a pathway from a childhood characterized by high levels of chaos, which may in turn generate greater feelings of being ignored, uncared for, or isolated, to greater endorsement of unmet interpersonal needs as a college student, to an increased risk for future suicidality, accidental injury or death, or overall life-diminishment. Importantly, this mediation model held for all four LAS:SF content domains with a robust path from family of origin chaos to greater current unmet interpersonal needs (13% of the variance explained). Consistent with ITS theory, the path from unmet interpersonal needs to the four different types of life-diminishing behavior was strongest for the two domains of life-diminishment that have traditionally been associated with suicidal behavior (Death/Suicide-related, 29%; Self-Related, 39%). However, the path from current unmet interpersonal needs to Injury/Risk-related behavior was also strong and accounted for 22% of the variance. The path from unmet interpersonal needs to the Health/Illness-related subscale was significant but only accounted for 11% of the variance. This study provides additional support for the importance of targeting belongingness as a path to greater well-being [27,28]. Of note, the overall model also accounted for the least variance in negative Health/Illness-related behavior. This may be a consequence of the low internal consistency of the HR subscale in this sample. Yet, there is a continued need to better understand college students' health and illness-related behaviors in the wake of the COVID-19 pandemic. We encourage a revision of the health-related LAS:SF subscale as cultural and societal changes, such as the COVID-19 global pandemic, the transition from a pandemic to an endemic, and ever-worsening global warming [29], are likely to have influenced which health-related behaviors are essential to assess and promote among emerging adults. Importantly, the proposed mediation model, from a history of experiencing family-of-origin chaos, through current unmet interpersonal needs, to predicting all four components of life-diminishing behavior, was robust for different groups of college students. It held for participants who identified as White or BIPOC, and those who reported being male at birth or female at birth, suggesting the importance of helping many types of families lower home instability and chaos while increasing connection, monitoring, and care throughout child rearing as one way to broadly promote wellness among young adults. It may also be that early identification of college students matriculating from chaotic homes would help ensure that these students have the support they need to successfully navigate the college environment. Further studies with longitudinal and experimental designs are needed.

Limitations

A key limitation of this study is the cross-sectional nature of these self-reported data, eliminating the ability to make causal inferences and raising the possibility of shared method variance. However, because the family-of-origin chaos items assess for the tenor of the home in which participants grew up, there is a temporal and historical variable anchoring our model. Additionally, although this sample was drawn from a large, relatively diverse university in the Southeastern U.S., the greater prevalence of White, young, female, and heterosexual participants in our sample suggests that care should be taken when generalizing these findings to diverse subgroups or those from other geographic regions. Given the small sample sizes of some subgroups, the authors dichotomized key demographic variables when testing the relationships among family-of-origin chaos, unmet interpersonal needs, and the LAS:SF. This approach, although appropriate for an initial study, does not take into consideration the influence of multiple intersecting identities in predicting life-diminishing behaviors or a lack of longevity promotion among college students. Finally, this study relies on data obtained via an online survey instrument; utilizing multi-modal designs that unfold over time would better elucidate these relationships.

Future Directions

Prevention efforts on college campuses have primarily addressed suicidal and/or life-diminishing behaviors by intervening directly with students who are expressing mental health risk factors like depression, who have had a previous suicide attempt or current suicide ideation, or who have been caught engaging in highly risky behavior on campus [30]. Utilizing these factors to identify at-risk students likely leaves many students underserved. This may be one of the reasons that suicide and accidents remain two of the leading causes of death among this population [31], and a variety of risky and potentially life-diminishing behaviors remain prevalent on college campuses [32,33]. Interventions that seek to increase self-compassion, hope, and emotional control while they foster a sense of community and inclusion may decrease the impact of perceived burdensomeness and thwarted belongingness [13,34,35]. Thus, campus-wide efforts to promote belongingness may facilitate the reduction of various problematic behaviors among college students while simultaneously tackling the sense of disconnection and loneliness many college students are coping with. Another implication of these findings is that broad health prevention and intervention efforts, rather than behaviorally siloed efforts, may also have utility in promoting wellness.

Declaration of Interest Statement

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