

Mattering and Satisfaction With Life: Gender and Age Differences Among Kenyan Secondary School Students

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Abstract

This study examined how mattering related with satisfaction with school life among secondary school students in Kenya ($N= 446$, $M = 17.40$, $SD = 1.22$; 55.8 % Male). Age and gender differences were also explored. Mattering had a moderate correlation with school life satisfaction. Both age and mattering explained 11 % variance in satisfaction with school life. Age and gender did not moderate the prediction of satisfaction with school life by mattering. The relationship was similar for middle and late adolescent students, but prediction was only significant among the middle adolescent group. No significant gender differences were reported among the study variables. The findings suggest that when students feel important and when their age is taken into account, they are more likely to have higher levels of satisfaction with their school experience.

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1. Introduction

Students' satisfaction with school life is of concern since it correlates with important outcomes like happiness, commitment, learning speed, discipline, and adjustment (Somers et al., 2022; Zhou et al., 2021). On the other hand, dissatisfaction with school life is linked with negative academic outcomes like: aggression, increased indiscipline, school dropout, a higher risk for academic failure, changes in academic and career plans, as well as poor transition outcomes (e.g. Bloch & Philips, 2022; Flett et al. 2022; Neugebauer et al., 2023; Sandner et al. 2023). Evidence from several countries in the West shows that COVID-19 lowered the life satisfaction of young people aged 15 to 30 more than that of

adults aged 31 to 60 (Henseke et al., 2022). A focus on the link between mattering and life satisfaction among adolescents is important owing to: first, the protective role of feelings of mattering in students' wellbeing in the post-COVID-19 contexts (e.g. Giangrasso et al., 2022; Liu et al. 2023; Rogowska et al. 2021) and second, the strategic role the school context plays in meeting students' mattering need (Cho, 2019; Widnall et al., 2022).

Conceptualized by the mattering and marginality theory as the natural feeling of being valuable and important to others (Schlossberg, 1989; Somers et al. 2022) mattering is considered as a formidable 'psychological shield' to a person faced with stress and distress (Flett, 2022). Thus, in the post-COVID-19 context, mattering is expected to be a crucial source of resilience and adaptability to students in their coping with the disruptions and psychological consequences of the pandemic (Besser et al., 2022; Flett, 2022; Vaillancourt, et al., 2022). Studies done among students either during or after the pandemic in countries as diverse as the China, Italy, Malaysia and United Kingdom linked mattering to positive outcomes like positive self-appraisals, satisfaction with life and overall well-being among students (Flett & Heisel, 2021; Giangrasso et al., 2022; Liu et al., 2023; Prihadi et al., 2021). In contrast, anti-mattering was linked to increased vulnerability to stress, depression, and anxiety and this may be deleterious to life satisfaction (Flett & Heisel, 2021; Giangrasso et al., 2022; Liu et al., 2023). Therefore, we hypothesized that mattering would positively correlate with school life satisfaction among secondary school students (H1).

A recent summary of eight research articles focusing on mattering (Flett et al., 2022) proposed that mattering is not only developmental in nature but it is also an essential component in how people define themselves. The default expectation is that, holding all factors constant, mattering ought to increase with age (Scarpa et al., 2021). In fact, just like the pioneer research on mattering (Rosenberg & McCulloch, 1981), current evidence (Flett, 2022) supports the differentiation of the construct by age with adolescents recording lower levels of it than adults. This trend sits well with the view of mattering as increasing through adulthood (probably owing to the close link between mattering and generativity (Flett, 2018; 2022). However, some evidence points at either a negative correlation between mattering and age, or at levels of mattering not interacting with age in establishing wellbeing (Flett & Heisel, 2021). These mixed findings reinforced the need to examine the links between mattering and age. We, therefore, hypothesized that age was correlated with mattering (H2a). We did not formulate any hypothesis on differences in mattering between middle and late adolescents.

The 2024 *World Happiness Report* (Helliwell et al. 2024) indicates that happiness varies by age and context. In the West, happiness among young people aged 15 to 24 had declined drastically designating young people as less happy than adults. However, Central and Eastern Europe, the former Soviet Union, and East Asia, recorded huge increases in happiness at every age. However, in South Asia, the Middle East and North Africa happiness had fallen at every age. This contrasts earlier assertion that older adolescents seemed to be happier with life than younger ones (Al-Attayah & Nasser, 2016). Happiness is often conceptualized in terms of satisfaction with life (See Singh et al., 2023 for a review; Veni et al., 2018) and the reported inconsistent global patterns of happiness among adolescents should worry stakeholders interested in students' satisfaction with school life. The reviewed literature primed us to expect age to be a related to satisfaction with school life (H2b). We further hypothesized that age moderated the relationship between mattering and satisfaction with school life (H2c).

Linked to the developmental nature of mattering, is the idea that gender, as a crucial aspect of self-concept, is an important dimension for differences in how mattering relates to mental health (Bonhag & Froese, 2022; Flett et al., 2022). In fact, there is ample evidence that women tend to have a greater sense of mattering compared to men (Cheat & Li, 2020; Rayle, 2005). However, this difference seems not to hold across cultures. In more non-egalitarian cultures, men often have higher mattering scores than women (e.g. in Iran, Dadfar et al., 2021; in Pakistan, Shafiq et al., 2024). We, therefore, found it important to explore whether gender moderated the relationship between mattering and life satisfaction among Kenyan high school students. Since most Kenyan communities are mainly patriarchal, we hypothesized that the male students would have higher mattering scores than female students (3a).

As per the *World Happiness Report 2024*, in higher income countries, girls consistently report lower levels of satisfaction with life than boys (Halliwell et al., 2024). This is consistent with findings from school attendees in Luxembourg (Brisson et al., 2023) and a recent meta-analysis (Chen et al., 2020). However, the popular finding has been that females consistently report higher satisfaction with life than males (Joshani & Jovanović, 2020; Namazi, 2022). This seems to hold even in rural Kenya (Daw et al., 2023) despite there being reports of sub-Saharan African men having higher satisfaction with life than women (Joshani et al., 2020). We, therefore, expected gender differences in satisfaction with school life with female students being more satisfied with school life than male students (H3b) and that gender would significantly moderate the relationship between mattering and satisfaction with life (H3c).

This study contributes to the literature in two important ways: First, a focus on students' satisfaction with school life heeds the calls for more research on this among African samples (Amoako & Asamoah, 2020; Lenz et al., 2018; Nyaranga et al., 2021). Second, the rapid growth of the field of mattering coupled with the increasingly popular view of mattering as a core universal need (Liu et al. 2023; Flett, 2022) call for more empirical evidence from different countries around the world. Despite the unavailability of cross-cultural studies on mattering, there is a growing pool of evidence from Australia, Canada, China, Great Britain, Italy, Israel, Japan, and South Korea among others speaking to the possible universality of the construct (see Flett, 2022 for review). We added to this pool by studying mattering among Kenyan high school students, a population that is largely underrepresented in mattering literature.

2. Materials and Methods

2.1. Participants

Our sample comprised of 446 high school students aged between 15 and 23 years ($M = 17.40$, $SD = 1.22$; 55.8 % Male) drawn from 12 secondary schools in Murang'a County Kenya. The students were all in form three (the third year of high school). Considering the range of our participants' age (15-23), we grouped them into two using the popular psychosocial developmental classification (Al-Attayah & Nasser, 2016; Bogaerts, et al., 2021): middle adolescents (14-17 years) and late adolescents (18-25) years (see Table 1). Majority (69.3 %) were middle adolescents ($M_{age} = 16.76$, $SD = 0.53$; range 15-17 years). In this sub sample, 168 participants (54.4 %) were male ($M_{age} = 16.75$, $SD = 0.47$; range 15-17 years) while

141 were female ($M_{\text{age}} = 16.78$, $SD = 0.59$; range 15-17 years). The late adolescence group had 137 participants ($M_{\text{age}} = 18.85$, $SD = 1.08$; range 18-23 years) out of whom 81 were male (59.1 %; $M_{\text{age}} = 18.96$, $SD = 1.11$; range 18-23 years) and 56 were female ($M_{\text{age}} = 18.68$, $SD = 1.03$; range 18-22 years). Overall, late adolescents were significantly older ($t_{(444)} = -27.29$, $p = <.001$) than the middle adolescents. However, students' age did not differ significantly by gender across the subsamples.

2.2. Measures

The General Mattering Scale

We used the General Mattering Scale (GMS, Schlossberg, 1989), a unidimensional measure consisting of 5 items assessing one's perceived significance to others. Participants are required to rate their level of agreement to the items using a 4-point Likert scale ranging from 1 = *not at all* to 4 = *a lot*. The scale is the most popular measure for mattering and it has been found to be reliable across different countries (see Flett, 2022 for a review) and when used among students (see Flett & Heisel, 2021). Higher scores indicated greater perceived mattering. The scale had sufficient degree of reliability ($\alpha = .60$) across gender and age groups.

Students' Life Satisfaction Scale

Students responded to the 7-item Life Satisfaction Scale (Huebner, 1991) on a scale of 1 = *strongly disagree* to 6 = *strongly agree*. Two items were reverse coded. The items were averaged into a global measure of satisfaction with life. The scale has good reliability across countries, age and gender (Huebner, 1991; Jovanović, et al., 2022). In this study, the scale had adequate reliability ($\alpha = .70$) and this was consistent across gender and age groups.

3. Data analyses and results

Table 1. *Descriptive Statistics and Reliability Across the Gender and Age Groups*

Variable	Statistic	Middle Adolescence				Late Adolescence				Total			
		Male	Female	Total	<i>t</i>	Male	Female	Total	<i>t</i>	Male	Female	Total	<i>t</i>
n		167	140	307		82	57	139		249	197	446	
Age	<i>M</i> (<i>SD</i>)	16.75 (0.47)	16.78 (0.59)	16.76 (0.53)	- 0.14	18.96 (1.11)	18.68 (1.03)	18.85 (1.08)	1.23	17.47 (1.28)	17.32 (1.13)	17.40 (1.22)	1.30
	Range	15-17	15-17	15-17		18-23	18-22	18-23		15-23	15-22	15-23	
	<i>Sk</i>	-1.48	-1.59	-1.52		1.32	1.42	1.33		1.34	1.48	1.41	
	<i>Kr</i>	1.06	1.53	1.23		1.36	1.06	1.16		2.14	3.09	2.51	
Mattering	<i>M</i> (<i>SD</i>)	14.28 (3.18)	14.19 (2.81)	14.23 (3.04)	0.25	14.87 (2.96)	14.94 (3.14)	14.92 (2.95)	0.12	14.47 (3.12)	14.41 (2.92)	14.44 (3.03)	0.23
	Range	5-20	6-20	5-20		7-20	7-20	7-20		5-20	6-20	5-20	
	<i>Sk</i>	-0.46	-0.34	-0.41		-0.52	-0.28	-0.41		-0.49	-0.28	-0.40	
	<i>Kr</i>	-0.10	0.13	-0.00		0.13	-0.43	-0.16		-0.04	-0.08	-0.06	
α	.63	.56	.60		.56	.65	.60		.60	.60	.60		
SWL	<i>M</i> (<i>SD</i>)	3.33 (1.08)	3.34 (1.05)	3.33 (1.07)	0.12	3.62 (0.97)	3.40 (0.99)	3.56 (0.97)	1.29	3.43 (1.06)	3.36 (1.03)	3.40 (1.05)	0.64
	Range	1.00-5.43	1-5.43	1.00-5.43		1.00-5.86	1.00-5.14	1.00-5.86		1.00-5.86	1.00-5.43	1.00-5.86	
	<i>Sk</i>	-0.23	-0.40	-0.31		-0.46	0.31	-0.39		-0.32	-0.38	-0.35	
	<i>Kr</i>	-0.70	-0.65	-0.69		0.32	-0.54	-0.11		-0.46	-0.62	-0.53	
α	.72	.70	.71		.64	.68	.66		.70	.70	.70		

Note. $N = 446$. SWL = satisfaction with school life; *Sk* =skewness, *Kr* = kurtosis.

Table 1 presents the means and standard deviations of the variables of interest across gender and age groups. Our data indicates that the average of scores in the General Mattering Scale was 14.44 ($SD = 3.03$). The satisfaction with school life scores had a mean of 3.40 ($SD = 1.05$). The skewness and kurtosis coefficients for both mattering and satisfaction with school life were within the range of ± 1 meeting the criteria for a normal distribution across the sub samples (Hair et al., 2017). We thus tested the study hypotheses using parametric tests since the variables met the criteria for normal distributions.

Table 2. Correlation Disaggregated by Gender and Age Categories

Variable	Male			Female			Total		
	<i>r</i>			<i>r</i>			<i>r</i>		
	GM	Age	SWL	GM	Age	SWL	GM	Age	SWL
Middle Adolescence (12-17 years)									
<i>n</i>	167	140	307						
1. GM	-			-			-		
2. Age	-.07	-		-.09	-		-.08	-	
3. SWL	.31**	.06	-	.32**	.11	-	.32**	.08	-
Late Adolescence (18-23 Years)									
<i>n</i>	82	57	139						
1. GM	-			-			-		
2. Age	-.02	-		-.08	-		-.05	-	
3. SWL	.24*	.04	-	.12	.07	-	.19*	.06	-
Overall Sample									
<i>N</i>	249	197	446						
1. GM	-			-			-		
2. Age	.05	-		.04	-		.05	-	
3. SWL	.31**	.13*	-	.26**	.08	-	.28**	.11*	-

Note. $N = 446$. GM = general mattering; SWL = satisfaction with school life.

* $p < .05$; ** $p < .01$.

Correlations between mattering, age, and satisfaction with school life

As presented in Table 2, overall, we found a significant moderate positive correlation between general mattering and satisfaction with life ($r = .28, p < .05$). Overall, the correlation was slightly higher among male students ($r = .30, p < .001$) than among their female counterparts ($r = .26, p < .001$) but the difference was not statistically significant ($z = 0.42, p = .34$). Notably, among late adolescents, the correlation was only significant and higher among the male students ($r = .24, p < .05$) relative to the females ($r = .12, p > .05$) but this difference was not statistically significant ($z = 0.69, p = .25$). Among the middle adolescents, the correlation was almost similar among male ($r = .31, p < .001$) and female participants ($r = .32, p < .001$). In terms of the age categories, revealed that although the correlation was stronger among the middle adolescents ($r = .32, p < .001$) than among the late adolescents ($r = .19, p < .05$), the difference was not significant ($z = 1.32, p = .09$). Notably, across the subsamples, the correlation between mattering and satisfaction with school life was consistently positive and significant (except among late adolescent girls) providing sufficient evidence to support (H1). We thus concluded that as students' sense of mattering increases so does their satisfaction with school life.

In our study, age did not relate with mattering contrary to our expectation (in hypothesis H2a). However, age significantly and positively correlated with satisfaction with life ($r = .11, p = .02$) though in a weak way. Overall, this correlation only held among male students ($r = .13, p = .04$) but faded out among female students ($r = .08, p = .29$) and across the sub samples ($z = 0.6, p = .27$). These findings were consistent with our expectation that age is correlated with satisfaction with school life

(hypothesis H2b).

Gender differences in the study variables

In line with hypothesis H3a, male students had a higher mean in mattering and contrary to hypothesis H3b, female students had lower scores in satisfaction with school life (see Table 1). In fact, on average, male students had total general mattering scores that were 0.06 points higher and total satisfaction with life scores that were 0.08 points higher than female students respectively. However, the gender differences in mattering ($t_{(444)} = 0.23, p = .82$) and satisfaction with school life ($t_{(444)} = 0.64, p = .52$) were not statistically significant. Thus our data did not support both hypotheses 3a and 3b.

Age differences in the study variables

Though not part of the key objectives of the study, we explored how the participants' scores for the study variables differed among the early and late adolescents. As shown in Table 1, the late adolescent group had higher means in age, general mattering and satisfaction with life. Notably, these differences were significant for age ($t_{(444)} = -27.29, p < .001$) and general mattering ($t_{(444)} = -2.16, p = .03$).

Moderation effect of age and gender in the relationship between mattering and satisfaction with life

Through regression analysis, we tested how mattering predicted satisfaction with school life moderated by age (H2c) and gender (H3c) as shown in Table 2.

Table 3. Regression Coefficients of General Mattering on Satisfaction with School Life

Variable	Model 1				Model 2			
	B	β	SE	95 % CI	B	B	SE	95 % CI
Constant	0.02		.07	[-0.11, 0.15]	0.02		.06	[-0.11, 0.15]
Gender	-0.05	-.02	.10	[-0.25, 0.15]	-0.05	-.02	.10	[-0.23, 0.14]
Age	0.09	.11*	.04	[0.01, 0.17]	0.09	.10*	.04	[0.01, 0.16]
Mattering					0.10	.29**	.02	[0.06, 0.14]
Mattering X Gender					-0.02	-.05	.01	[-0.04, 0.10]
Mattering X Age					-0.01	-.02	.32	[-0.07, 0.05]
R ²	.01					.09		
ΔR^2						.08**		

Note. $N = 446$. In model 1, we entered the control variables of age and gender to predict students' satisfaction with school life. In Model 2, we entered mattering as a predictor together with its interactions with age and gender.

Our findings indicated that the model for predicting satisfaction with school life from age and gender (Model 1) was marginally non-significant ($F(2,443) = 2.87, p = .06$) with age accounting for a paltry 1 % of variance ($R^2 = .01$) in satisfaction with school life. Compared to age ($\beta = .10, p < .05$), gender was not a significant predictor ($\beta = -.02, p > .05$). The addition of mattering and the interaction terms into Model 2 was significant ($F(5,440) = 8.90, p = < .001$). The test for R^2 change in model 2 was also significant ($\Delta R^2 = .08, F(3, 440) = 12.86, p = < .001$). Both age ($\beta = .10, p = .03$) and mattering ($\beta = .29, p = < .001$) significantly predicted satisfaction with school life with mattering contributing almost thrice as much as age. However, for every standard deviation increases in age and mattering, satisfaction with school life had an almost uniform increase of 0.09 and 0.10 points respectively. In this study, both gender and age did not interact with mattering in predicting satisfaction with school life.

Since in this study, late adolescents significantly scored higher in mattering and were significantly older than the middle ones, we explored how the regression of the relationship between mattering and satisfaction with school life ran across the age categories (Table 4).

Table 4. Regression Examining the Association of General Mattering and Satisfaction with School Life across the Age categories

	Variable	Middle Adolescence						Late Adolescence					
		B	SE	β	t	p	95% CI	B	SE	β	t	p	95% CI
Model 1	(Constant)	3.43	.11		30.89	.00	[3.21, 3.65]	3.56	.16		21.60	.00	[3.24, 3.89]
	Gender	.01	.12	.01	.10	.92	[-0.23, 0.25]	-.21	.17	-.11	-1.23	.22	[-0.56, 0.13]
	Age	.16	.12	.08	1.40	.16	[-0.06, 0.39]	.04	.08	.05	.54	.59	[-0.11, 0.20]
	R^2	.06						.02					
	F	1.00						0.98					
	ΔR^2	.06						.02					
	ΔF	1.00						1.01					
Model 2	(Constant)	1.76	.53		3.33	.00	[0.72, 2.80]	2.31	.92		2.50	.01	[0.48, 4.14]
	Gender	.03	.12	.01	.23	.82	[-0.20, 0.25]	-.20	.17	-.10	-1.15	.25	[-0.54, 0.14]
	Age	.22	.11	.11	1.97	.05	[0.00, 0.43]	.05	.08	.05	.63	.53	[-0.11, 0.20]
	GM	.12	.04	.34	3.26	.00	[0.05, 0.19]	.08	.06	.26	1.36	.17	[-0.04, 0.20]
	GM x Age	.02	.05	.04	.43	.67	[-0.07, 0.11]	.00	.03	-.02	-.10	.92	[-0.06, 0.06]
	GM x Gender	.02	.04	.03	.40	.69	[-0.06, 0.09]	-.04	.06	-.08	-.68	.50	[-0.16, 0.08]
	R^2	.11						.06					
	F	7.50***						1.52					
	ΔR^2	.10						.04					
	ΔF	11.77***						1.85					

Notably, the model predicting satisfaction with school life from age and gender was not significant for both early and late adolescents. However, upon adding mattering and its interaction with age and gender in model 2, the model was

significant with age and mattering accounting for 10 % increase in students' satisfaction with school life. In this study, among the early adolescents, the degree of variance in satisfaction with school life as accounted for by mattering was slightly over three times ($\beta = .34, p = <.0001$) that accounted for age ($\beta = .11, p = .05$). Thus, for every standard deviation increase in early adolescents' age and mattering, their satisfaction with school life significantly increased by 0.11 and 0.34 points respectively. This contrasts the pattern among late adolescents where, although not significantly so, variance in satisfaction with school life was slightly over five times more likely to be explained by mattering ($\beta = .26, p = .17$) than age ($\beta = .05, p = .53$). Notably, mattering's interactions with both age and gender were not significant in its relationship with satisfaction with school life, as was the case in the overall regression model (Table 3).

4. Discussion

In this study, we investigated the relation between mattering and satisfaction with school life among Kenyan high school students, majority of whom were in middle adolescence. We hypothesized that mattering would correlate with age and satisfaction with school life. We further expected females to have higher scores in both mattering and satisfaction with school life and that both age and gender would moderate how mattering correlated with satisfaction with school life.

We found that mattering correlated positively with school life satisfaction and that this relationship held across the sub samples except for female students who were in late adolescence. The study findings are consistent with those reported among college students in diverse contexts such as South Korea (Choi & Hong, 2020); America (Cole et al., 2020); and Ghana (Lenz et al., 2018). The findings are also consistent with those reported among high school students in Canada (Hamby et al., 2020) and Michigan USA (Somers et al., 2022). Following the recommendation by Shapiro et al. (2021), we disaggregated the correlation between mattering and satisfaction with school life by gender and established that it was relatively stronger among male students than female students, although the difference was not significant. This suggests the need for future studies to keep on examining how gender interacts with both mattering and satisfaction with life in efforts aimed at establishing how the two variables relate with each other.

Gender differences in mattering were consistent with the prediction that male students would have higher scores (H3a). This is consistent with research conducted in non-egalitarian societies such as Iran (Dadfar et al., 2021) and Pakistan (Shafiq et al., 2024) where men have been found to have higher mattering scores than women. However, the result was inconsistent with the prior research that reported women as having a greater sense of mattering compared to men (Cheat & Li, 2020; Rayle, 2005). In testing for gender differences in satisfaction with school life, contrary to our expectation (Hypothesis 3b), we found that male students had non-significantly higher scores in satisfaction with school life. This agrees with past research (Brisson et al., 2023; Chen et al., 2020; Halliwell et al., 2024) that found girls to be less satisfied with life than boys. Although our finding is in line with prior evidence that sub-Saharan African men have higher satisfaction with life than women (Jashonloo et al., 2020), it contrasts the popular finding, that women, even in rural Kenya (Daw et al., 2023), consistently report higher levels of satisfaction with life than men (Jashonloo & Jovanović, 2020; Namazi, 2022). The study adds more evidence on the heterogeneity of findings regarding gender differences in both mattering and satisfaction with life. Although the reasons for this inconsistency is not clear, our reviewed evidence

revealed that results may or may not vary depending on the age of the respondents, culture sex and country in which the study is done (Al-Attayah & Nasser, 2016; Batz-barbarich et al., 2018; Dadfar et al., 2021; Daw et al., 2023; Jashonloo & Jovanović, 2020; Jovanović, et al., 2022; Namazi, 2022; Shafiq et al., 2024).

In this study, regression analysis revealed that students' age (but not gender), significantly predicted satisfaction with school life. This should warrant more scrutiny since both age and gender are important in experiencing satisfaction with life as well as in the manifestation of vulnerability in post COVID-19 contexts (Maggi et al., 2022). Notably, we found that among middle adolescents, mattering accounted for almost thrice as much variance as age in students' satisfaction with school life. However, among the late adolescents, although not significant, mattering explained slightly over five times the amount of variance accounted for by age in students' satisfaction with life compared to age. Previous findings among Kenyan high school students (Ngesu, 2021; Nyangara et al., 2021) have linked mattering to important markers of school adjustment. According to Flett et al. (2022), researchers have identified seven positive aspects of mattering which can improve satisfaction with school life as well as other mental health outcomes. Combined with our findings, it is apparent that, irrespective of gender and age, a student who feels significant and valued by others in school has a key inner resource that can increase their satisfaction with life at school. It is clear that mattering is central to wellbeing, as evidenced by both hedonic and eudaimonic life satisfaction (see review by Paradisi et al. 2024). That mattering significantly predicted satisfaction with life in middle rather than late adolescence remains intriguing. We may speculate that middle adolescents are more in need of social validation, more sensitive to peer approval, and more self-conscious than late adolescents. These characteristics are all linked to how adolescents define themselves (Choukas-Bradley et al., 2022; Han et al., 2021). This is in line with the assertion by Flett et al. (2022) that mattering is essential to how people define themselves. Their assertion that feeling important feeds positive emotions while not feeling important feeds negative emotions also hinted to a connection between mattering and adolescent life satisfaction.

Practical Implications

This study highlights two key issues for educational practice. First, we found mattering to matter more than age in explaining students' satisfaction with school life. This seemed to be more significant among the middle adolescents than late adolescents. Therefore, increasing students' sense of worth to others should be the key goal of initiatives meant to increase their satisfaction with school life. Second, this study demonstrates the importance of students' age rather than gender in promoting their satisfaction with school life. The results indicate that interventions targeted at raising secondary school students' level of satisfaction with educational experience would be more effective if they were more age-appropriate. Overall, our regression analysis demonstrated that when students feel important and when their age is taken into account, they are more likely to have higher levels of satisfaction with their school experience.

Limitations and Implications for future research

This study had some notable limitations that may inform future directions. First, two thirds of our sample were in the middle adolescence category. Second, we only involved students in their third year of secondary school in 12 schools in

Murang'a County of Kenya and, despite using a relatively large sample, this may not be very representative. Future research may consider these issues to overcome potential sampling biases. Third, we only used a questionnaire to collect data and we did not control for the role of schools and the psychosocial climate prevailing at home and in the respective schools. Finally, considering current evidence that culture exerts influence on almost all the variables in this study (Kryss et al., 2022; Shapiro et al., 2021) it would also be interesting to find out if the association patterns found in this study hold true across cultures. How mattering relates with satisfaction with school life across all counties in Kenya still remains an open question. It would also be interesting to understand how relationship pans out across schools in East Africa as well as in Africa as a whole. Why mattering only significantly predicted satisfaction with school life among middle adolescents- and not in late adolescents- remains unexplained as well. Future studies may seek to address this discrepancy.

5. Conclusion

The study found a significant positive correlation between mattering and satisfaction with school life. In regression analysis, mattering had the largest contribution to predicting satisfaction with life followed by age. When comparing middle adolescents to late adolescents, the prediction was only significant among the former. There were no discernible gender differences in any of the study variables.

Statements and Declarations

Data Availability

The research data used to support the findings of this study are available from the corresponding authors upon request.

Conflicts of interest

The authors declare that they have no conflict of interest.

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References

- Aknin, L. B., De Neve, J.-E., Dunn, E. W., Fancourt, D. E., Goldberg, E., Helliwell, J. F., Jones, S. P., Karam, E., Layard, R., Lyubomirsky, S., Rzepa, A., Saxena, S., Thornton, E. M., VanderWeele, T. J., Whillans, A. V., Zaki, J., Karadag, O., & Ben Amor, Y. (2022). Mental health during the first year of the COVID-19 pandemic: A review and recommendations for moving forward. *Perspectives on Psychological Science*, 17(4), 915-936. <https://doi.org/10.1177/17456916211029964>
- Al-Attayah, A. & Nasser, R. (2016). Gender and age differences in life satisfaction within a sex-segregated society: sampling youth in Qatar. *International Journal of Adolescence and Youth*, 21(1), 84-95. <https://doi.org/10.1080/02673843.2013.808158>
- Amoako, K. & Asamoah, G. (2020) Indicators of students' satisfaction of quality education services in some selected universities in Ghana. *South African Journal of Higher Education* <https://www.researchgate.net/publication/346537998>
- Batz-Barbarich, C., Tay, L., Kuykendall, L., & Cheung, H. K. (2018). A Meta-analysis of gender differences in subjective well-being: Estimating effect sizes and associations with gender inequality. *Psychological Science*, 29(9), 1491–1503. <https://doi.org/10.1177/0956797618774796>
- Besser, A., Flett, G. L., Nepon, T., & Zeigler-Hill, V. (2022). Personality, cognition, and adaptability to the Covid-19 pandemic: Associations with loneliness, distress, and positive and negative mood states. *International Journal of Mental Health and Addiction*, 20, 971–995. <https://doi.org/10.1007/s11469-020-00421-x>
- Bloch, S., & Phillips, S. A. (2022). Mapping and making gangland: A legacy of redlining and enjoining gang neighborhoods in Los Angeles. *Urban Studies*. <https://doi.org/10.1177/00420980211010426>
- Bogaerts, A., Claes, L., Buelens, T., Verschueren, M., Palmeroni, N., Bastiaens, T., & Luyckx, K. (2021). Identity synthesis and confusion in early to late adolescents: Age trends, gender differences, and associations with depressive symptoms. *Journal of Adolescence*, 87, 106–116. <https://doi.org/10.1016/j.adolescence.2021.01.006>
- Bonhag, R., & Froese, P. (2022). Sources of mattering for women and men: Gender differences and similarities in feelings of social significance. *Sociological Perspectives*, 65(4), 748-767. <https://doi.org/10.1177/07311214211057119>
- Brisson, R., Mendes, F.G., & Catunda, C. (2023). Accounting for the gender gap in adolescents' life satisfaction: evidence from nationally representative samples of school attendees in Luxembourg. *International Journal of Adolescence and Youth*, 28(1), 2283563. <https://doi.org/10.1080/02673843.2023.2283563>
- Cheat, F. Y. W. & Li, L. P. (2020). "Am I Matter for Others?" A study on mattering among students in a public university. *Jurnal Psikologi Malaysia*, 34(3), 176-185. <https://spaj.ukm.my/ppppm/jpm/article/view/514>
- Chen, X., Cai, Z., He, J., & Fan, X. (2020). Gender differences in life satisfaction among children and adolescents: A meta-analysis. *Journal of Happiness Studies: An Interdisciplinary Forum on Subjective Well-Being*, 21(6), 2279–2307. <https://doi.org/10.1007/s10902-019-00169-9>
- Cho, E. Y.-N. (2019). A multilevel analysis of life satisfaction among secondary school students: Do school-level factors matter? *Children and Youth Services Review*, 102, 231–242. <https://doi.org/10.1016/j.childyouth.2019.05.002>
- Choi, Y., & Hong, H. Y. (2020). The mediating effects of mattering and self-acceptance in the relationship between socially prescribed perfectionism and social anxiety. *The Journal of the Korea Contents Association*, 20(1), 259–270. <https://doi.org/10.5392/JKCA.2020.20.01.259>
- Choukas-Bradley, S., Roberts, S. R., Maheux, A. J., & Nesi, J. (2022). The perfect storm: A developmental-

- sociocultural framework for the role of social media in adolescent girls' body image concerns and mental health. *Clinical Child and Family Psychology Review*, 25(4), 681–701. <https://doi.org/10.1007/s10567-022-00404-5>
- Cole, D., Newman, C. B., & Hypolite, L. I. (2020). Sense of belonging and mattering among two cohorts of first-year students participating in a comprehensive college transition program. *American Behavioral Scientist*, 64(3), 276–297. <https://doi.org/10.1177/0003764219869417>
 - Dadfar, M., Lester, D., & Sanadgol, S. (2021). The interpersonal mattering scale: Its reliability and validity in an Iranian sample. *Mental Health, Religion & Culture*, 24(3), 244–260. <https://doi.org/10.1080/13674676.2020.1726884>
 - Daw, T. M., Reid, N. J., Coulthard, S., Chaigneau, T., António, V.M., Cheupe, C., Wells, G. & Bueno, E. (2023). Life satisfaction in coastal Kenya and Mozambique reflects culture, gendered relationships and security of basic needs: Implications for ecosystem services. *Ecosystem Services*, 62, 101532. <https://doi.org/10.1016/j.ecoser.2023.101532>
 - Flett, G. L. (2018). *The psychology of mattering: Understanding the human need to be significant*. Elsevier Academic Press
 - Flett, G. L. (2022). An introduction, review, and conceptual analysis of mattering as an essential construct and an essential way of life. *Journal of Psychoeducational Assessment*, 40(1), 3–36. <https://doi.org/10.1177/07342829211057640>
 - Flett, G. L., & Heisel, M. J. (2021). Aging and feeling valued versus expendable during the covid-19 pandemic and beyond: A review and commentary of why mattering is fundamental to the health and well-being of older adults. *International Journal of Mental Health and Addiction*, 19(6), 2443–2469. <https://doi.org/10.1007/s11469-020-00339-4>
 - Flett, G. L., Nepon, T., Goldberg, J. O., Rose, A. L., Atkey, S. K., & Zaki-Azat, J. (2022). The Anti-Mattering Scale: Development, psychometric properties and associations with well-being and distress measures in adolescents and emerging adults. *Journal of Psychoeducational Assessment*, 40(1), 37–59. <https://doi.org/10.1177/07342829211050544>
 - Giangrasso, B., Casale, S., Fioravanti, G., Flett, G. L., & Nepon, T. (2022). Mattering and anti-mattering in emotion regulation and life satisfaction: A mediational analysis of stress and distress during the COVID-19 pandemic. *Journal of Psychoeducational Assessment*, 40(1), 125–141. <https://doi.org/10.1177/07342829211056725>
 - Hair, J., Hollingsworth, C.L., Randolph, A.B. & Chong, A.Y.L. (2017), "An updated and expanded assessment of PLS-SEM in information systems research" *Industrial Management & Data Systems*, 117(3), 442-458. <https://doi.org/10.1108/IMDS-04-2016-0130>
 - Hamby, S., Taylor, E., Mitchell, K., Jones, L., & Newlin, C. (2020). Health-related quality of life among adolescents as a function of victimization, other adversities, and strengths. *Journal of Pediatric Nursing*, 50, 46–53. <https://doi.org/10.1016/j.pedn.2019.11.001>
 - Han, M., Jiang, G., Luo, H., & Shao, Y. (2021). Neurobiological bases of social networks. *Frontiers in psychology*, 12, 626337. <https://doi.org/10.3389/fpsyg.2021.626337>
 - Helliwell, J. F., Layard, R., Sachs, J. D., & De Neve, J. E. (Eds.). (2021). *World happiness report, 2021*. New York: Sustainable Development Solutions Network. <https://worldhappiness.report/>
 - Helliwell, J. F., Layard, R., Sachs, J. D., De Neve, J.-E., Aknin, L. B., & Wang, S. (Eds.). (2022) *World happiness report 2022*. New York: Sustainable Development Solutions Network. <https://worldhappiness.report/>

- Helliwell, J. F., Layard, R., Sachs, J. D., De Neve, J.-E., Aknin, L. B., & Wang, S. (Eds.). (2024) *World happiness report 2024*. University of Oxford: Wellbeing Research Centre.
- Henseke, G., Green, F., & Schoon, I. (2022). Living with COVID-19: Subjective well-being in the second phase of the pandemic. *Journal of Youth and Adolescence*, 51(9), 1679–1692. <https://doi.org/10.1007/s10964-022-01648-8>
- Huebner, E. S. (1991). Initial development of the students' life satisfaction scale. *School Psychology International*, 12, 231–240.
- Hurel, C., Ehlinger, V., Molcho, M., Cohen, J. F., Falissard, B., Sentenac, M., & Godeau, E. (2023). Life satisfaction in the context of the COVID-19 pandemic among middle school adolescents in France: findings from a repeated cross-sectional survey (EnCLASS, 2012-2021). *Frontiers in Pediatrics*, 11, 1204171. <https://doi.org/10.3389/fped.2023.1204171>
- Joshanloo, M., & Jovanović, V. (2020). The relationship between gender and life satisfaction: analysis across demographic groups and global regions. *Archives of Women's Mental Health*, 23(3), 331–338. <https://doi.org/10.1007/s00737-019-00998-w>.
- Lee, K. T. & Furukawa, H. (2023). Exploring subjective happiness, life satisfaction, and sustainable luxury consumption in China and Japan amidst the COVID-19 Pandemic. *Administrative Sciences*, 13: 169. <https://doi.org/10.3390/admsci13070169>
- Jovanović, V., Rudnev, M., Arslan, G., Buzea, C., Dimitrova, R., Góngora, V., Guse, T., Ho, R. T. H., Iqbal, N., Jámbori, S., Jhang, F. H., Kaniušonytė, G., Li, J., Lim, Y. J., Lodi, E., Mannerström, R., Marcionetti, J., Neto, F., Osin, E., Park, J., ... Žukauskienė, R. (2022). The satisfaction with life scale in adolescent samples: Measurement invariance across 24 countries and regions, age, and gender. *Applied Research in Quality of Life*, 17(4), 2139–2161. <https://doi.org/10.1007/s11482-021-10024-w>
- Lenz, A. S., Watson, J. C., Luo, Y., Norris, C., & Nkyi, A. (2018). Cross-cultural validation of four positive psychology assessments for use with a Ghanaian population. *International Journal for the Advancement of Counselling*, 40(Supplement 1), 148–161. <https://doi.org/10.1007/s10447-017-9317-8>
- Liu, W., Gamble, J. H., Cao, C. H., Liao, X. L., Chen, I. H., & Flett, G. L. (2023). The general mattering scale, the anti-mattering scale, and the fear of not mattering inventory: Psychometric properties and links with distress and hope among Chinese University students. *Psychology Research and Behavior Management*, 16, 4445–4459. <https://doi.org/10.2147/PRBM.S430455>
- Maggi, G., Baldassarre, I., Barbaro, A., Cavallo, N. D., Cropano, M., Nappo, R., & Santangelo, G. (2022). Age- and gender-related differences in the evolution of psychological and cognitive status after the lockdown for the COVID-19 outbreak: a follow-up study. *Neurological Sciences: official journal of the Italian Neurological Society and of the Italian Society of Clinical Neurophysiology*, 43(3), 1521–1532. <https://doi.org/10.1007/s10072-021-05768-0>
- Namazi A. (2022). Gender differences in general health and happiness: A study on Iranian engineering students. *PeerJ*, 10, e14339. <https://doi.org/10.7717/peerj.14339>
- Neugebauer, M., Patzina, A., Dietrich, H., & Sandner, M. (2023). Two pandemic years greatly reduced young people's life satisfaction: Evidence from a comparison with pre-COVID-19 panel data. *European Sociological Review*, 1-15. <https://doi.org/10.1093/esr/jcad077>

- Ngesu, L. M. (2022). Voices from the students: Dissatisfaction and violence in secondary schools in Kenya. *Journal of Educational Research in Developing Areas*, 3(1), 73-79. <https://doi.org/10.47434/JEREDA.3.1.2022.73>
- Nyaranga, R. L., Ngesu, L., K'Odhiambo, A. K., & Masese, A. (2021). Prevalence of various forms of domestic violence and their effects on students classroom behaviors in Bungoma County, Kenya. *Journal of Educational Research in Developing Areas*, 2(3), 278-289. <https://doi.org/10.47434/JEREDA.2.3.2021.278>
- Paradisi, M., Matera, C. & Nerini, A. (2024). Feeling important, feeling well. The association between mattering and well-being: A meta-analysis study. *Journal of Happiness Studies*, 25(4). <https://doi.org/10.1007/s10902-024-00720-3>
- Prihadi, K. D., Lim, E. S. Z., Sim, E., & Chong, K. Y. (2021). Mattering and life satisfaction among the quarantined adults in Malaysia during the COVID-19 pandemic. *International Journal of Public Health Science*, 1(1), 189-193. <http://doi.org/10.11591/ijphs.v10i1.20684>
- Rayle A. D. (2005). Adolescent gender differences in mattering and wellness. *Journal of Adolescence*, 28(6), 753–763. <https://doi.org/10.1016/j.adolescence.2004.10.009>
- Robinson, E., Sutin, A. R., Daly, M., & Jones, A. (2022). A systematic review and meta-analysis of longitudinal cohort studies comparing mental health before versus during the COVID-19 pandemic in 2020. *Journal of Affective Disorders*, 296, 567–576. <https://doi.org/10.1016/j.jad.2021.09.098>
- Rogowska, A. M., Ochnik, D., Kuśnierz, C., Jakubiak, M., Schütz, A., Held, M. J., Arzenšek, A., Benatov, J., Berger, R., Korchagina, E. V., Pavlova, I., Blažková, I., Konečná, Z., Aslan, I., Çınar, O., & Cuero-Acosta, Y. A. (2021). Satisfaction with life among university students from nine countries: Cross-national study during the first wave of COVID-19 pandemic. *BMC Public Health*, 21(1), 2262. <https://doi.org/10.1186/s12889-021-12288-1>
- Rosenberg, M., & McCullough, B. C. (1981). Mattering: Inferred significance and mental health among adolescents. *Research in Community & Mental Health*, 2, 163–182.
- Roy, A. K., Breaux, R., Sciberras, E., Patel, P., Ferrara, E., Shroff, D. M., Cash, A. R., Dvorsky, M. R., Langberg, J. M., Quach, J., Melvin, G., Jackson, A., & Becker, S. P. (2022). A preliminary examination of key strategies, challenges, and benefits of remote learning expressed by parents during the COVID-19 pandemic. *School Psychology (Washington, D.C.)*, 37(2), 147–159. <https://doi.org/10.1037/spq0000465>
- Sandner, M., Patzina, A., Anger, S., Bernhard, S., & Dietrich, H. (2023). The COVID-19 pandemic, well-being, and transitions to post-secondary education. *Review of Economics of the Household*, 21(2), 461–483. <https://doi.org/10.1007/s11150-022-09623-9>
- Scarpa, M. P., Di Martino, S., & Prilleltensky, I. (2021). Mattering mediates between fairness and well-being. *Frontiers in Psychology*, 12, 744201. <https://doi.org/10.3389/fpsyg.2021.744201>
- Schlossberg, N. K. (1989). Marginality and mattering: Key issues in building community. *New Directions for Student Services*, 48, 5-15.
- Shafiq, B., Ali, A., & Iqbal, H. (2024). Perfectionism, mattering and loneliness in young adulthood of Generation-Z. *Heliyon*, 10(1), e23330. <https://doi.org/10.1016/j.heliyon.2023.e23330>
- Shanahan, L., Steinhoff, A., Bechtiger, L., Murray, A. L., Nivette, A., Hepp, U., Ribeaud, D., & Eisner, M. (2022). Emotional distress in young adults during the COVID-19 pandemic: Evidence of risk and resilience from a longitudinal cohort study. *Psychological Medicine*, 52(5), 824–833. <https://doi.org/10.1017/S003329172000241X>

- Shapiro, J. R., Klein, S. L., & Morgan, R. (2021), Stop 'controlling' for sex and gender in global health research. *BMJ Global Health*, 6, 005714. doi:10.1136/ bmjgh-2021-005714.
- Singh, S., Kshtriya, S., & Valk, R. (2023). Health, Hope, and Harmony: A Systematic Review of the Determinants of Happiness across Cultures and Countries. *International Journal of Environmental Research and Public Health* 20(4), 3306. <https://doi.org/10.3390/ijerph20043306>
- Somers, C., Gill-Scalcucci, S., Flett, G. L., & Nepon, T. (2022). The utility of brief mattering sub scales for adolescents: Associations with learning motivations, achievement, executive function, hope, loneliness, and risk behavior. *Journal of Psychoeducational Assessment*. <https://doi.org/10.1177/07342829211055342>
- Vaillancourt, T., Brittain, H., Krygsman, A., Farrell, A. H., Pepler, D., Landon, S., Saint-George, Z., & Vitoroulis, I. (2022). In-person versus online learning in relation to students' perceptions of mattering during COVID-19: A brief report. *Journal of Psychoeducational Assessment* <https://doi.org/10.1177/07342829211053668>.
- Veni, R. K., Gomes, R. F., & Aurora, A. P. (2018). Differences in happiness and emotional intelligence among adolescents and adults. *Indian Journal of Health and Wellbeing* 9(1), 115-117.
- Widnall, E., Adams, E. A., Plackett, R., Winstone, L., Haworth, C. M. A., Mars, B., & Kidger, J. (2022). Adolescent experiences of the covid-19 pandemic and school closures and implications for mental health, peer relationships and learning: A qualitative study in South-West England. *International Journal of Environmental Research and Public Health*, 19(12), 7163. <https://doi.org/10.3390/ijerph19127163>
- Zheng, Y., & Zheng, S. (2023). Exploring educational impacts among pre, during and post COVID-19 lockdowns from students with different personality traits. *International Journal of Educational Technology in Higher Education*, 20(1). <https://doi.org/10.1186/s41239-023-00388-4>
- Zhou, J., Huebner, E. S., & Tian, L. (2021). Co-developmental trajectories of psychological need satisfactions at school: Relations to mental health and academic functioning in Chinese elementary school students. *Learning and Instruction*, 74, 101465. <https://doi.org/10.1016/j.learninstruc.2021.101465>