



Article Effects of Gender and Age Interaction on Sense of Coherence and Subjective Well-Being of Senior High School Students in Northern Ghana

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Abstract: Though several studies have established the effect of gender and age on the sense of coherence (SoC) and subjective well-being (SWB) among diverse populations, findings have been varied and inconclusive. These inconsistencies have been attributed to the differences in sample characteristics, methodological and cultural disparities. Thus, the present study assessed the following: (1) gender and age effect on SoC, (2) gender and age effect on SWB, and (3) moderating roles of gender and age in the link between SoC and SWB. Through a stratified sampling technique, 724 selected high school students from secondary schools in Northern Ghana completed the World Health Organization-5 Well-Being and Sense of Coherence instruments. The results showed that female students showed no significant difference in SWB levels, older female students, compared to older males, exhibited high levels of SWB. Age significantly moderated the relationship between SoC and SWB. With the same level of SoC, younger students were more likely to exhibit higher SWB compared to older ones. The findings call for sustainable gender- and age-based interventions because students subjectively develop SoC mechanisms for improving their well-being.

Keywords: age; gender; sense of coherence; subjective well-being; Northern Ghana; students

1. Introduction

Student life is considered to be stressful due to the increasing school demands, poor school environment, inadequate support, and inadequate learning/instructional resources, and for some students, it may cause mental health problems (i.e., fear, anxiety, depression,



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Copyright: © 2024 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https:// creativecommons.org/licenses/by/ 4.0/). stress, and poor subjective or psychological well-being) [1–6]. Quality learning and academic achievement among students largely depend on several factors including mental health and subjective well-being (SWB) [7–11]. Accordingly, stakeholders, governments, and policymakers have recommended the promotion of mental health and well-being for all, further documented in the Sustainable Development Goal 3 (SDG 3) of member countries, including Ghana [12,13]. SWB is an individual's personal judgment about their overall well-being. It includes both affective reactions (emotional, social, and psychological well-being) and cognitive judgments (satisfaction with life and happiness) [14,15]. Extant scholars have found that adolescents and young adults in schools experience low to moderate levels of SWB in different jurisdictions [16–20].

Findings on gender and age differences in students' SWB are conflicting [21,22]. Several reports have shown female experience SWB better than male students in Spain [23] and Norway [24]. Contrary results have been found in Italy [25], Croatia [26], Norway [27,28], China [29], and Nigeria [30]. Others reported no gender differences in Hungary [22], Turkey [31], and Israel [32]. With respect to age and SWB, several inquiries have also revealed contradictory results [28,30]. For example, Ronen et al. [32] found that older in-school adolescents (19–24 years) in Israel reported lower levels of SWB than younger ones (12–18 years). Also, in Nigeria, Abdullahi et al. [30] established that younger adults (under 24) were more associated with better SWB (i.e., social well-being and happiness) than older adults (over 24). Regarding the interaction effects of gender and age on students' SWB, Atienza-González et al. [33], found that age and gender have a high level of differential discriminatory power for SWB among adolescents in schools in Spain, and Moksnes et al. [34] in Norway discovered that boys demonstrated superior life satisfaction than girls across all ages, except in the age group 17–18 years, where girls scored higher than boys. Relatedly, Inglehart [35] and Easterlin [36] indicated that younger females are happier than younger males, while older females are less happy than older males.

High school students' SWB or psychological well-being can be improved and maintained through personal health coping resources during stressful situations. Sense of coherence (SoC) is a central resource for the protection and promotion of health and a source of resilience during stressful situations [37]. SoC is described as a personal coping resource and life orientation, which is recognized as the ability to perceive life as comprehensible, manageable, and meaningful, and the perception of having resources needed to cope with normative and non-normative stressors in daily life [38–40]. Conceptually, SoC comprises three components: comprehensibility, manageability, and meaningfulness. Comprehensibility refers to the extent to which one can perceive internal and external stimuli as understandable. Meaningfulness implies that a person is engaged with something in life that is important to them on both an emotional and a cognitive level. Manageability focuses on the available resources needed to meet an individual's demands. Collectively, these elements enable individuals to use functional coping strategies when confronted with substantial challenges and to resolve tension in a health-promoting manner [37,41]. Dadaczynski et al. [16] revealed a positive association between students' SoC dimensions and SBW.

Numerous empirical studies have shown that a high level of SoC is associated with positive mental health, SWB and quality of life, and lower severity of symptoms of anxiety and depression among students [34,37,39,42–44]. Students with high SoC have the ability to moderate stress based on available psychological and social resources [45–47] and eventually adjust to the school environment and society [48]. Evidence on gender and age differences in SoC among students is split dichotomously [24,49–52]. For example, Matić and Jureša [26] found higher SoC among male students than females in Croatia. Conversely, Mayer et al. [49] found higher SoC in favour of female students in China and Germany. Although an individual's SoC remains relatively stable upon reaching adulthood [38,53], age and SoC positively relate across the lifespan [54,55]. However, other studies indicated no differences in SoC across gender groups [34,54,56,57], age groups [34,54], and the interaction effects of gender and age [54].

Related findings on SoC and SWB were reported in Croatia [26,58], Norway [24,27,51], Turkey [59], and Poland [60,61]. Extant researchers have also produced inconsistent findings. For example, Moksnes and Espnes [24] found significant interaction effects of sex in the link between SoC dimensions and mental well-being with the associations strongest for female students. Likewise, Johansen et al. [62], in Norway, discovered that SoC was strongly associated with mental distress in all age groups and for both genders. However, Nilsson et al. [63], revealed that SoC and well-being increased with age in both sexes in Sweden, where males showed a stronger SoC and greater well-being than females. Other investigators have also found that the strength of the association between SoC and SWB does not differ between genders or across age groups [34,64].

In Ghana, mental health and SWB among students have become a major concern among educational stakeholders and policymakers. In-school adolescents usually experience a wide range of cultural and environmental transformations due to family responsibilities, rising academic and social demands, and explorations of stressful new experiences with peers and novel adult activities [2,6,65,66]. These experiences are further exacerbated by financial distress and/or poverty, including other structural disparities [65,67,68]. Taken together, these developments raise the question of whether high school students, during this rapidly changing developmental period, can maintain a high level of SWB via their personal health coping resource (i.e., SoC). Most of the existing inquiries regarding students' SoC and SWB have been conducted in developed countries (e.g., the UK, the US, Germany, Spain, Finland, Poland, and Norway) and a few developing economies (e.g., Nigeria) with none in Ghana. This inquiry is necessary because the concept of well-being is context- and cultural-driven and, consequently, differs based on geographical situations [69–71]. This study examined the interaction effects of gender and age on the SoC and SWB of senior high school students in Ghana. Specifically, we assessed (1) gender and age effects on SoC, (2) gender and age effects on SWB, and (3) moderating roles of gender and age in the link between SoC and SWB.

2. Materials and Methods

2.1. Study Context

This study was conducted in senior high schools (SHSs) (formerly referred to as secondary schools—a 3-year period after basic education). SHSs in the northern belt of Ghana were targeted for this study because of the peculiarities of the settings within those regions. Available statistics from the World Bank report show that Northern Ghana has a high rate of poverty among the general populace [72], leading to higher school drop-out rates or delayed school access [68]. The region is also characterized by people who are in their young adulthood still at the pre-tertiary level. This study selected young adults who were still in school at the time of data collection.

2.2. Participants' Selection

This study's sample consisted of selected senior secondary school students who had lived in the Northern Region of Ghana for more than ten (10) years. Using the descriptive cross-sectional survey design, seven hundred and twenty-four (n = 724) students including males (n = 333, 48%) and females (n = 391, 54%) were selected to participate in this study. Participants' ages ranged from fourteen (14) years to twenty-one (21) years, with means and standard deviation values of 18.69 and 1.58, respectively. The stratified sampling method was employed in the selection process. The survey was conducted as part of the global COVID-HL network (www.covid-hl.org).

2.3. Study Variables

2.3.1. World Health Organization 5-Item Well-Being Index

The sense of well-being of participants was measured using the 5-item unidimensional well-being index developed by the WHO [73]. The survey instrument assesses well-being on a 6-point Likert-type scale that ranges from 0 "at no time" to 5 "all of the time". Some

of the items on the scale are as follows: "I have felt cheerful and in good spirit", "My daily life has been filled with things that interest me", "I have felt active and vigorous", "I have felt calm and relaxed", "I woke up feeling fresh and rested", and "I have felt calm and relaxed". Demographic variables such as gender and age of participants were also assessed. Gender included males and females whiles age was measured as a continous variable. The psychometric properties of this survey instrument were established among varied samples and cultures (including Ghana, see 74), with a reliability coefficient value of 0.754 using Omega ω estimation procedure. Quansah et al. [74] found this instrument to be of high quality among secondary school students in Ghana. The scale showed high validity evidence based on external structure with a shared variance of 56.6% with positive and negative affect. The instrument also measured well-being with high precision, with a reliability of 0.86 from an IRT analysis. Additionally, the scale was found to provide relatively stable information across secondary students with varying levels of well-being. All items contributed meaningfully to the measure.

2.3.2. Sense of Coherence

Vogt et al.'s [75] 9-item questionnaire, which was initially developed based on workrelated SoC, was adopted to assess participants' SoC. This scale was generally adopted to measure the present living situations of individuals during the COVID-19 pandemic. The questionnaire has 3 major dimensions, including meaningfulness (3 items), comprehensibility (4 items), and manageability (2 items) assessed on a 7-point Likert scale that ranges from 0 to 6. Quansah et al. [76] reported an internal consistency of 0.81 (Omega reliability) among adolescents and young adults in senior high schools in Ghana. The authors found the instrument suitable for measuring SoC among individuals in this cohort. This justifies our use of the instrument.

2.4. Procedure

A reference number DAA/P.1/Vol.1/39 was obtained from the Ethical Review Board of the University of Education, Winneba, after all ethical standards had been adhered to. Headmasters of all the selected senior high schools involved also approved for the study to be conducted. Aside from that, the student should have stayed in any part of the Northern Region of Ghana for more than 10 years. Due to the wideness of the study setting, the researchers employed and thoroughly trained 12 secondary school teachers to assist in collecting the data in their respective schools. The process of recruitment started by establishing a good interpersonal relationship between the students, research team, research assistants and both teaching and non-teaching staff of all the schools marked for the study. While building a good rapport, the researchers thoroughly explained the purpose of the study to all students and teachers present. These students were informed that they were free to either decide to take part in the study or otherwise. Written informed consent forms were signed and obtained from students who showed interest in the study. Participants were assured that all responses they provided would be kept anonymous and confidential, while all COVID-19 safety protocols were duly followed. The research assistants helped in distributing the survey instruments to the students and answered them during their free periods, as indicated on their schools' timetable. Responding to the survey items, participants took between 15 and 20 min. All answered questionnaires were retrieved, sealed in brown envelopes, and handed over to one researcher to keep.

2.5. Data Analysis Strategy

The data analyses were preceded with descriptive statistics of the variables, including participants' demographic information. Particularly, the mean, standard deviation, skewness, kurtosis, and minimum and maximum values of the variables were computed. The expected skewness and kurtosis values were ± 2 and ± 7 , respectively [77]. To determine gender and age effects on SWB and SoC, a series of factorial ANOVAs were performed. This analysis was conducted after the normality and homogeneity of variance assumptions

were met. The moderated moderation analysis was conducted to examine the roles of gender and age in the relationship between SoC and SWB. Using the bootstrapping method (i.e., 5000 bootstrap samples), a moderation analysis was performed using Model 3 of the Hayes' PROCESS framework [78]. These data were processed using SPSS (version 25, International Business Machines (IBM) Incorporation, New York, NY, USA) with the PROCESS add-on package.

3. Results

3.1. Descriptive Statistics on the Demographic Information of Study Participants

The descriptive information of study participants is presented in Table 1.

Indicators	Age	SoC	SWB	Gender Distribution		
				Level	Freq.	Percent
Mean	18.69	24.10	38.12	Male	333	46.0
Std. deviation	1.58	8.68	22.00	Female	391	54.0
Skewness	-0.02	1.88	0.32	Total	724	100.0
Std. error of skewness	0.09	0.09	0.09			
Kurtosis	0.31	6.11	-0.41			
Std. error of kurtosis	0.18	0.18	0.18			
Minimum	14.00	9.00	0.00			
Maximum	21.00	63.00	92.0			

Table 1. Descriptive statistics.

The study sampled more female students (54%) than male students (46%). The descriptive statistics, as presented in Table 1, revealed a mean age of 18.69 years and a standard deviation of 1.58. The youngest student was 14 years and the oldest was 21 years. The SoC variables had minimum and maximum scores of 9 and 63 respectively, with a mean of 24.10 and a standard deviation of 8.68. Similarly, the SWB had a mean score of 38.12 and a standard deviation of 22. The skewness and kurtosis values for the associated variables were acceptable.

3.2. Gender and Age Effects on SoC of Students

The study further examined gender and age effects on SoC levels of students. Tables 2 and 3 present the outcome of the analysis.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected model	1721.455	3	573.818	7.826	0.000
Intercept	221,216.027	1	221,216.027	3017.052	0.000
Gender	844.249	1	844.249	11.514	0.001
Age	43.847	1	43.847	0.598	0.440
Gender*age	7.681	1	7.681	0.105	0.746
Error	52,791.775	720	73.322		
Total	475,145.000	724			
Corrected total	54,513.231	723			
	Source Corrected model Intercept Gender Age Gender*age Error Total Corrected total	SourceType III Sum of SquaresCorrected model1721.455Intercept221,216.027Gender844.249Age43.847Gender*age7.681Error52,791.775Total475,145.000Corrected total54,513.231	Source Type III Sum of Squares Af Corrected model 1721.455 3 Intercept 221,216.027 1 Gender 844.249 1 Age 43.847 1 Gender*age 7.681 1 Error 52,791.775 720 Total 475,145.000 724 Corrected total 54,513.231 723	SourceType III Sum of SquaresdfMean SquareCorrected model1721.4553573.818Intercept221,216.0271221,216.027Gender844.2491844.249Age43.847143.847Gender*age7.68117.681Error52,791.77572073.322Total475,145.00072424Corrected total54,513.231723	SourceType III Sum of SquaresdfMean SquareFCorrected model1721.4553573.8187.826Intercept221,216.0271221,216.0273017.052Gender844.2491844.24911.514Age43.847143.8470.598Gender*age7.68117.6810.105Error52,791.77572073.322701Total475,145.000724723723

Table 2. Gender and age difference in SoC levels.

The outcome of the analysis revealed no significant gender and age interaction effect on SoC, F(1, 720) = 0.105, p = 0.746 (see Table 2). This outcome means that none of the gender categories are associated with age in terms of SoC. Likewise, there was no significant main effect for age on SoC, F(1, 720) = 0.598, p = 0.440. However, there was a significant gender main effect on SoC, F(1, 720) = 11.514, p = 0.001 (see Table 2). Probing the significant gender effect, female students (M = 25.74, SD = 10.19) showed higher levels of SoC, as compared to their male counterparts (M = 22.71, SD = 6.86) (see Table 3). This result means that among senior school students in Northern Ghana, males and females broadly differ in their SoC regardless of their age. In other words, age is not a determiner of the SoC of male and female students.

Sex	Age	Mean	SD
	14–17 years	22.36	8.95
Male	18–21 years	22.75	6.58
	Total	22.71	6.86
Female	14–17 years	25.04	11.05
	18–21 years	26.00	9.86
	Total	25.74	10.19
Total	14–17 years	24.20	10.47
	18–21 years	24.08	8.24
	Total	24.10	8.68

Table 3. Mean and standard deviation.

3.3. Gender and Age Effects on SWB of Students

This study examined whether there were gender and age differences that existed in the levels of SWB among the students. The details of the results are shown in Table 4.

Table 4. Gender and age differences in SWI	er and age differences in S	SWB
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Source	Type III Sum of Squares	df	Mean Square	F	Sig.
SWB Corrected model	17,280.474	3	5760.158	12.471	0.000
Intercept	572,273.420	1	572,273.420	1239.027	0.000
Gender	3904.131	1	3904.131	8.453	0.004
Age	40.086	1	40.086	0.087	0.768
Gender*age	1992.510	1	1992.510	4.314	0.038
Error	332,548.830	720	461.873		
Total	1,401,984.000	724			
Corrected total	349,829.304	723			

The outcome of this analysis revealed a significant gender-and-age interaction effect on SWB, F(1, 720) = 4.314, p = 0.038 (see Table 4). Thus, male and female students of certain age brackets have different experiences of SWB. The gender main effect on SWB was significant, F(1, 720) = 8.453, p = 0.004. However, there was no significant main effect for age on SWB, F(1, 720) = 0.087, p = 0.768. A post hoc analysis further revealed that whereas no gender differences exist in the levels of SWB for students aged 14 to 17 years, a significant difference was found between male and female students who were aged from 18 to 21 years (see Figure 1). These results suggest that gender differences in SWB levels only occur within a particular age group and not across all age groups.



Estimated Marginal Means of Subjective Well-Being

Figure 1. Gender and age effects on SWB.

3.4. Moderating Roles of Gender and Age in the Relationship between SoC and SWB

This study also assessed the moderating roles of gender and age in the relationship between SoC and SWB. The details of the analysis are shown in Table 5.

	β	SE	t	р	LLCI	ULCI
Constant	-50.446	28.087	-1.796	0.073	-105.588	4.696
SoC	3.227	0.878	3.674	0.000	1.503	4.952
W1	121.594	53.936	2.254	0.024	15.702	227.485
Int_1	-3.224	2.079	-1.551	0.121	-7.306	0.857
Age	3.612	1.525	2.369	0.018	0.619	6.606
Int_2	-0.117	0.047	-2.511	0.012	-0.209	-0.026
Int_3	-6.935	2.895	-2.396	0.017	-12.618	-1.252
Int_4	0.177	0.111	1.600	0.110	-0.040	0.395

Table 5. Moderation parameters of gender and age in the link between SoC and SWB.

W1—male; comparison group—female; interaction terms: Int_1—SoC* W1, Int_2—SoC*Age, Int_3—W1*Age, Int_4—SoC*W1*Age. Model summary: F (7, 716) = 30.087, MSE = 377.536, p < 0.001, $R^2 = 0.227$.

The results, as presented in Table 5, showed that SoC positively predicted the SWB levels of students, $\beta = 3.227$, SE = 0.878, 95% BootCI (1.503, 4.952). However, the results revealed no significant effect of the gender–age interaction on the relationship between SoC and SWB, $\beta = 0.177$, SE = 0.111, 95% BootCI (-0.040, 0.395). Although gender independently failed to moderate the relationship between SoC and SWB, age significantly moderated this positive relationship, $\beta = -0.117$, SE = 0.047, 95% BootCI (-0.209, -0.026).

The significant moderating effect of age in the relationship between SoC and SWB is shown in Figure 2.

As shown in Figure 2, the regression slope for younger students (i.e., 14–17 years) was steeper, as compared to older students (i.e., 18–21 years). This pattern suggests that the effect of SoC and SWB is large for younger students and small for older adults. With the same level of SoC, younger students, relative to older ones, were more likely to exhibit higher levels of SWB.



Figure 2. Probing the significant moderating effect of age.

4. Discussion

This study assessed the interaction effects of gender and age on SoC and SWB. Specifically, gender and age differences in SoC and SWB, and the moderating effects of gender and age on the link between SoC and SWB were the objectives that guided this study. We found no significant interaction effects of gender and age on SoC. Although much empirical evidence is not available on the interaction effect of gender and age on SoC, Maulana and colleagues' [54] study confirmed the non-significant gender-age interaction effect on SoC among flood victims in Indonesia. Providing a better perspective of this interaction, we found a non-significant main effect for age on SoC, indicating similar levels of SoC across age. The findings of previous research are consistent with the outcome of this research, confirming non-significant age differences in SoC [34,54]. It is suggestive that the non-significant age variations in SoC contributed to the non-significant gender-age interaction effect. The non-significant age variations in SoC among the students in the present study could be explained from different viewpoints. First, scholars have intimated that an individual's SoC remains relatively stable upon reaching adulthood, suggesting that before the adulthood stage, SoC levels may not significantly differ across the students' age bracket [38,53]. Additionally, the age range in this research was quite narrow (i.e., 14 years to 21 years), and this could explain why the analysis yielded non-significant age differences in SoC. Moreover, it appears that the majority of studies, which revealed non-significant age differences in SoC, were conducted in a collectivist culture where the level of SoC is dictated by the extent of social ties, unity, interdependency, and a sense of community. Just like previous studies, this research was also conducted in a collectivist cultural setting.

This study further revealed a significant gender main effect on SoC levels of the students, with females showing higher SoC relative to their male counterparts, a finding consistent with previous studies [49,52,76]. The implication is that, in stressful situations and times, female students are better able to utilize available psychological resources to moderate challenging situations. Female students appear to understand their current situation and perceive that as worthy to manage with the available resources. This finding contradicts popular viewpoints that males are more resilient and possess a higher capacity

to cope with stressful situations [66]. Despite this view, our finding is somewhat anticipated, considering the context in which the study was conducted (i.e., Northern Ghana). Notably, the northern zone of Ghana has recorded increased non-governmental organization (NGO) activities primarily targeting women and children because of their vulnerability to limited equal opportunities (e.g., access to health, school, and work). From traditional and cultural beliefs among people in Northern Ghana, females are taken through all kinds of ordeals and unpleasant experiences. For instance, younger girls are made to enter early marriage, which, in most cases, is against their will. Additionally, females are also not enrolled in schools based on the belief that they are meant for household chores.

Following these peculiar experiences, various programs have been rolled out to empower women and children within the Northern sector of Ghana. One of such programs is the Campaign for Female Education (CAMFED), which offers scholarships to schools and capital and training for young girls and women in trading. The implementation of these interventions may largely be responsible for building a high SoC capacities among females in Northern Ghana, hence the finding of the current study. Contrary results have been found in some studies that males have higher SoC than females [26,50,51]. Other research evidence has also reported no differences in SoC across genders [34,54,56,57]. Variations in methodology, as well as settings for these studies, might account for the contrasting results. For example, the present was conducted in a poverty-prone area during COVID-19, and thus, such situations may reveal findings that are likely to differ from earlier studies.

Gender and age interaction effects were identified on the SWB of students. Female students develop higher SWB than males as they become older, although similar levels of SWB are reported for both genders when younger. Specifically, among students aged 18–21 years, females had improved SWB compared to males, compared to those aged 14–17 years. This result could imply that by early ages when students are approaching the peak of their teenage years, they are confronted with numerous life changes as they transition to late teens where most of them strive to gain autonomy [34]. At that stage, it is possible that both males and females might have not developed mechanisms well enough to deal with life challenges. Interpreting this finding within the framework of our earlier argument on the continuous care and over-concentration of NGOs on females in Northern Ghana, we further argue that at early ages, females are in their initial stages of training and empowerment from the activities of the NGOs, hence showing no differences in SWB with their male counterparts. However, from the ages of 18 to 21 years, there is a large possibility that females might have mastered the pieces of training and empowerment support provided; therefore, they are better able to deal with life challenges at this later age.

Although no previous studies have examined gender and age interaction effects on SWB, some researchers have independently studied the gender–SWB relationship as well as the age–SWB link. Whereas some previous studies have found significant gender/age differences in SWB findings [23,24], similar to the findings of this research, other studies have discovered otherwise, which contradicts our findings [25,26,28]. Even though our findings partly agree with the aforementioned information, it must be noted that in those studies, gender differences were found without recourse to age. In our study, the gender difference was only peculiar within a specific age category (18–21 years). This study provides clarity and specificity on the age and gender effects on SWB. Caution, therefore, has to be exercised in the interpretation of the main effects of age and gender on SWB.

Other results showed that though a positive association between SoC and SWB exists, the strength of the relationship was stronger for younger individuals than older ones. This result means that the relationship between SoC and SWB is contingent on age. Across all the age groups, high SoC leads to improved SWB, with younger individuals experiencing better SWB than the older ones (18–21 years). However, the relationship was similar across gender categories. Given that gender does not discriminate the relationship between SoC and SWB. This finding contradicts Moksnes and Espnes [24], who found significant interaction effects of gender on the link between SoC and mental well-being, with the associations strongest for female students. Though the authors used mental well-being, it is not different from

SWB, but rather, it is an element of SWB. Similarly, Nilsson et al. [63] found that males showed a stronger SoC and well-being link than females. This study's finding that the influence of SoC is higher among younger individuals is well anticipated. This finding underscores the relevance of age in the association between SoC and SWB. This result also suggests that SoC interventions targeted at improving SWB should carefully consider the age variable, as has been strongly communicated by Amoako et al. [79].

Strengths and Limitations

This study's findings are relevant for educational practice and the organization of the education system as there is the need to develop programs and interventions that take into account gender and age differences. This approach could lead to the formulation of more inclusive and effective educational guidelines that have the potency of improve students' SWB, including building their resilience during ardous and stressful situations. Further, training educators in these areas could enhance teaching and student support, recognizing and addressing the diverse experiences and needs of students in an educational environment.

Though gender and age have shown evidence of an interaction effect, inferences on causality cannot be assumed. The survey nature of this study may not allow generalization over time since the issues of SoC and SWB may change depending on the factors that may be causing stress for the students and the study context. Further, the sample size may not be representative of the general school population in Ghana, which might have implications for the generalization of the findings [80]. Notwithstanding the limitations, this study has revealed key dynamics on the confounding effects of age and gender associated with SoC and SWB.

5. Conclusions

Female students have better SoC than males. Similarly, older females compared to their older male counterparts have better SWB, and younger students have improved levels of SWB. These findings may be largely due to interventions rolled out in these regions, which largely paid more attention to persons in their youth, young girls, and women. Since females at all stages have access to support through these intervention programs, they are likely to develop internalized mechanisms for dealing with stressful situations, which will consequently improve their SWB. Likewise, similar support for younger individuals also builds them up to cope with stressful events to improve their SWB. Unfortunately, whereas younger female students continue to receive support at every stage of their lives, their male counterparts do not, leaving a gap between older female and male students regarding their SoC and SWB. The study findings provide useful information to help sensitize educational policymakers, educators, and health workers on the importance of SoC in improving the SWB of students in Ghana. Future empowerment programs could be guided by this construct, leading to the development of sustainable intervention programs for promoting positive psychosocial and healthy behaviors of students in secondary schools. The findings call for sustainable gender- and age-based interventions for students because they subjectively develop different SoC mechanisms to improve their well-being.

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