

1 Influencing Proactive and Reactive Aggression:

2 C-SELF The social-emotional learning fortification for children and youth program in public primary
3 schools in Antigua and Barbuda.

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18 regulation⁵. (Min.5-Max. 8)

19 **Abstract**

20 There are no structured programs to respond to youth violence and the social, emotional, and
21 behavioral well-being amongst students in the Caribbean. There has been little data collected and
22 organized research conducted on the efficacy and impact of programs, which may combat youth
23 violence and improve social, emotional, and behavioral health (UNDP, 2012; Maharaj et al., 2009;
24 World Bank, 2007). Without rigorous impact evaluations, the region continues to lack effective and
25 sustaining strategies for preventive programs. Because empirical data mostly comes from studies
26 done in high-income countries, their adaptability is at question for the low- and middle-income Latin
27 America and Caribbean (LAC) region as the causes of violence and mental health well-being may be

29 This manuscript shares outcomes from the implementation of the Children and Youth Social-
30 Emotional Learning Fortification (C-SELF) social-emotional health strategy embedded into the
31 curriculum in five schools in Antigua and Barbuda. In 2020, using data from 2017 to 2018, a mixed
32 method study was conducted with 482 (intervention) and 152 (control) primary school students. Data
33 was analyzed for the influence of the intervention on 16 factors. The findings suggest positive
34 outcomes, without significance, in decreased depression, anxiety, self-control, and competence.

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35 Significance was found only when self-reported aggression was compared to teacher reactive-
36 aggression perception of student behavior. The findings suggest students' behaviors, with teachers or
37 in the classroom, are linked to being teased or being aggravated in other parts of the school
38 environment. This new data, though known anecdotally, offers insight into how we capture and
39 deploy effective resources. It demonstrates the importance of socio-emotional learning curriculum
40 changes to increase children's mastery of self-regulated behaviors, decision-making, self-
41 management, and self-leadership skills. More longitudinal studies in the future are needed especially
42 to study where socio-emotional learning strategies help to reduce aggression, particularly those
43 which may lead to violent behaviors in the LAC region.

44 **1 Introduction**

45 There is a spotlight on socio-emotional health. A pandemic has increased the call for such teaching
46 and learning strategies in responding to students. Most programs aim to help schools and students
47 self-regulate behaviors, make decisions, self-manage, and increase leadership skills. We examine,
48 herein, the effects of the Children and Youth Social-Emotional Learning Fortification (C-SELF)
49 program in public primary schools in Antigua and Barbuda. Currently, there are no structured
50 programs to respond to youth violence and the social, emotional, and behavioral well-being amongst
51 students in the Caribbean. There has been little data collected and organized research conducted on
52 the efficacy and impact of programs, which may combat youth violence and improve social,
53 emotional, and behavioral health (UNDP, 2012; Maharaj et al., 2009; World Bank, 2007). Without
54 rigorous impact evaluations, the region continues to lack effective and sustaining strategies for
55 preventive programs. Because empirical data mostly comes from studies done in high-income
56 countries, their adaptability is at question for the low- and middle-income Latin America and
57 Caribbean (LAC) region as the causes of violence and mental health well-being may be specific to
58 the region (Campie et al., 2019; Williams, 2013).

59 This manuscript shares outcomes from the implementation of the C-SELF social-emotional health
60 strategy embedded into the curriculum in five schools in Antigua and Barbuda. In 2020, using data
61 from 2017 to 2018, a mixed method study was conducted with 482 (intervention) and 152 (control)
62 primary school students. Data was analyzed for the influence of the intervention on 16 factors. The
63 findings suggest positive outcomes, without significance, in decreased depression, anxiety, self-
64 control, and competence. Significance was found only when self-reported aggression was compared
65 to teacher reactive-aggression perception of student behavior. The findings suggest students'
66 behaviors, with teachers or in the classroom, are linked to being teased or being aggravated in other
67 parts of the school environment. This new data, though known anecdotally, offers insight into how
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69 learning curriculum changes to increase children's mastery of self-regulated behaviors, decision-
70 making, self-management, and self-leadership skills. More longitudinal studies in the future is
71 needed specially to study where socio-emotional learning strategies help to reduce aggression
72 particularly those which may lead to violent behaviors in the LAC region.

73 **1.1 Materials and Methods**

74 **Review of the Literature**

75 The Caribbean is negatively impacted by rising crime and violence. Based on homicide rates, the
76 region is the most violent in the world (Inter-American Development Bank, 2017). There were three
77 times more murders in Antigua in 2014 than there were in 2000. Robberies rose by 65% from 2013
78 to 2014 (Overseas Security Advisory Council, 2015). There has also been an explosion of youth

79 violence in the region. It is the leading cause of the death of young men in the Caribbean between the
80 ages of 15 and 24 (World Bank, 2007). Additionally, violence against women in general is higher
81 with female youth in the Caribbean, disproportionately victimized by violence (Pan American Health
82 Organization, 2012). Caribbean countries account for three out of the top ten recorded rates of global
83 rapes (World Bank, 2007). While the region demonstrates violence and crime patterns comparable to
84 countries with similar macro- and socio-economic status and demographics, it displays a
85 disproportionately high rate of crime that poverty and social factors do not solely explain.

86 Violence and crime are developmental, economic, and public health concerns that are arguably the
87 number one social problem for this region (Inter-American Development Bank, 2017; World Bank,
88 2007). A weak system of education and poor academic outcomes, especially for those in the lower
89 socioeconomic strata (Matthews, 2013), are factors that are shown to increase the rate of violence and
90 compromise psychosocial development. Eastern Caribbean youth are graduating with inadequate
91 education that leaves them economically vulnerable and more inclined to turn to crime and violence
92 (UNDP Subregional Office for Barbados and the OECS, 2011).

93 The Caribbean is also fraught with mental healthcare concerns. Studies done in the Caribbean
94 indicate a significant number of youth (persons under the age of 29) suffer from moderate to high
95 levels of depressive symptoms (Lipps et al., 2012; Maharaj et al., 2009). Mild to severe symptoms
96 were reported by more than 50 percent of all adolescents (Lipps et al., 2012; Samms-Vaughan et al.,
97 2005) 29.1% reported moderate to severe levels (Lipps et al., 2012). Antigua and Barbuda showed
98 that 12.6% of males and 22.5% of females between the ages of 13 and 15 had considered suicide and
99 9.3% of males and 15.7% of females had attempted suicide at least once (WHO School Based
100 Student Health Survey (GSHS), 2009).

101 When compared to North American and Europe studies, Caribbean adolescents appear to report a
102 higher rate of moderate to severe levels of depressive symptoms (Lipps et al., 2010). They cite
103 female headed households, poverty, and poor education as contributing factors unique to the region.
104 The WHO School Based Student Health Survey (GSHS) in the Eastern Caribbean, surveyed students
105 and reported a high rate of mental health challenges. Mental health is inadequately served, and
106 disorders often go unrecognized, undiagnosed, and untreated in the Caribbean. Left untreated, mental
107 health disorders have a corrosive effect on society contributing to such things as violence, shattered
108 families, decreased productivity, and increased economic cost.

109 **Schools as a Protective Factor against Violence and Aggression**

110 Youth violence, although alarming, is preventable. Schools serve as a distinctive point of access to
111 both prevent and reduce the rate of youth violence and crime for long-term social impact. Once the
112 behaviors are mitigated early, there are decreases in probability of later violence and crime (World
113 Bank Sustainable Development Department of Latin America and The Caribbean Region, 2011).
114 Evidence-based youth preventive care programs show early investment yield greater return and
115 decreases violence and other risk behaviors (e.g. substance abuse, unprotected sex, obesity) (Butts et
116 al., 2010; Schweinhart et al., 2005).

117 The power of schools to provide protective factors to mitigate violence through attendance and
118 connectedness factors has been shown. In fact, empirical research done in the Caribbean demonstrate
119 schools serving as the most effective place to aid in violence and risk behavior reduction especially in
120 alcohol and drug use, premature and unsafe sexual activity, and smoking (Blum, 2005; Blum et al.,
121 2003). Hahn and colleagues 2007 study revealed that 60 percent of boys and 55 percent of girls
122 reported feeling connected to schools and were less likely to engage in violent behaviors. Of

123 significance, the study found there were cumulative traits to risk and protective factors. That is, when
 124 one holds risk factors at a constant; then adds protective factors, there is a decreased rate of reported
 125 participation in violence. This is also true in the reverse: when protective factors are held at a
 126 constant and salient risks are incrementally added, risk behavior increases. Schools serving as a
 127 change agent also offers the unique advantage of reach: the population at large attends and can be
 128 impacted during the important formative years. This provides additional credence for using the
 129 school institution as a means for universal school-based violence prevention programs integrated into
 130 the curriculum (Hahn et al., 2007).

131 Rigorous studies highlight the value of a primary prevention measure for sustainability and long-term
 132 cost effectiveness when compared to other alternatives (Butts et al., 2010; Schweinhart et al., 2005).
 133 Empirical evidence shows school-based programs, at all grade levels, have a significant impact on
 134 decreasing youth violence. School-based interventions which start at an early age can shape students'
 135 healthy ways, perceptions, attitudes, and behaviors (Botvin et al., 2006; Hawkins, Catalano,
 136 Kosterman, Abbott, & Hill, 1999). This is particularly important as studies show that without
 137 intervention, aggressive behaviors are more likely to manifest later and present as violence and social
 138 dysfunction.

139 Shaping healthy patterns of behavior is easier to implement and cost effective in the long-term verses
 140 restructuring ingrained mindsets and behaviors (Heckman, 2007). The earlier the onset of
 141 intervention, the greater the return on investment and the greater the cost effectiveness. For instance,
 142 the cost-benefit analyses of the Seattle Social Development Project in elementary schools, which
 143 showed a reduction of delinquency six years post intervention, suggested there was a \$3.14 benefit
 144 for each invested dollar (Botvin et al., 2006). Furthermore, high-quality programs have shown these
 145 effects can be sustained well into adulthood and have positive impacts on a range of health-risk
 146 behaviors, such as substance use and unsafe sexual behavior (Barnett, 1993). Analyses of evidence-
 147 based programs show that violent behaviors can be reduced across all school years by 15 percent and
 148 29 percent for secondary students (Hahn et al, 2007).

149 **Schools as a Protective Factor against Depression and Anxiety**

150 Preventive school-based interventions on depression and anxiety are shown to be effective at
 151 preventing or reducing depressive and anxiety symptoms, 65 percent and 73 percent respectively
 152 (Corrieri et al., 2013) as well as improve executive functioning and cognitive and academic
 153 functioning (Flook et al., 2010; Napoli et al., 2005). Meta-analysis of social-emotional programs
 154 showed that said initiatives can improve learning outcomes between 11 and 17 percent (Payton et al.,
 155 2008). Mindfulness programs have also been shown to aid in stress reduction, effective coping skills,
 156 and improved wellbeing for the development of healthier teachers and connectedness with students
 157 (Roeser et al., 2013; Taylor et al., 2015). Evidence-based youth prevention programs show that
 158 early investment into individual's social, mental, and behavioral health is cost effective. Assimilating
 159 social-emotional health into the school curriculum cultivates life-long competencies and psychosocial
 160 skills. It improves learning outcomes and resiliency and enhances health, social, and economic
 161 wellbeing.

162 **Statement of the Problem**

163 Structured programs to respond to the concerns of youth violence and the social, emotional, and
 164 behavioral wellbeing is non-existent in the Caribbean. There has been little data collected and
 165 organized research to improve social, emotional, and behavioral health (UNDP, 2012; World Bank,
 166 2007). Because high-income countries are the primary producers of knowledge in this area lacking

167 cultural relevance, there is need for more LAC regional studies and evaluation on programs defined
 168 for violence and socio-emotional and mental health wellbeing (Campie et al., 2019; Razzouk et al.,
 169 2008; Wirtz et al., 2016).

170 **Study AIM and research questions**

171 The study goal is to assess the outcomes associated with the implementation of the C-SELF social-
 172 emotional health strategy in the Antigua and Barbuda school curriculum. The program serves as a
 173 resource for teachers, school administrators, government, and community stakeholders in the region.
 174 To respond to the study goal, permission was sought and granted from the Antigua and Barbuda
 175 Ministry of Education for implementation in several schools. Students were assessed using formal
 176 measures of social-emotional competencies on five factors, namely persistence, self-control, social
 177 competence, proactive aggression, and reactive aggression.

178 There were two research questions governing the study.

179 **Research Questions**

- 180 1. Can the C-SELF Programme improve children’s social-emotional competencies and
 181 maladaptive behaviour? If so, how effective is it?
- 182 2. Is there a significant difference in social-emotional competencies when the students are
 183 grouped by gender?

184 **Hypothesis**

185 The investigation’s research hypothesis was the C-SELF would be able to:

- 186 1. Increase students’ ability to regulate their emotions,
- 187 2. Decrease proactive and reactive aggression,
- 188 3. Promote social competencies (e.g. persistence and social competence).

189 **Methodology**

190 The methodology details the research participants, intervention program, research design, sampling
 191 techniques used in the collection of data, data collection procedures, and instrumentation. It also
 192 presents the legal and ethical considerations.

193 **Intervention Program**

194 The C-SELF Program is a simple-to-administer social, emotional, and behavioral school-based
 195 program. There are ten (10) learning modules (see Table 1) administered over a ten-week period once
 196 per week for approximately 25-minutes. During the intervention sessions, the entire class engages in
 197 a structured three-to-five-minute daily C-SELF exercise. This is practiced at the beginning of the day
 198 and after lunchtime consisting of mindfulness breathing, positive emotional focusing, self-regulation,
 199 impulse control, goal-orientation, self- and other-compassion.

200 **(INSERT TABLE 1 HERE)**

201 Teachers integrated the C-SELF skills into their daily curriculum and supported and encouraged the
 202 children’s practice. The curriculum assimilation helped the children internalize the skills and created
 203 a more harmonious classroom environment.

204 **Implementation of the Intervention Program**

205 Five schools ($n = 621$) of primary public-school children in Antigua and Barbuda from grades 3 to 6
206 aged six to thirteen participated in the intervention program. Grades 2 and below received 2-3-weeks
207 intervention. Class size varied per class and school ($n = 10$ to 30 per class). In Antigua and Barbuda,
208 there are 29 public primary schools with a student body of 4,795. There are four primary school
209 zones. At least one school was chosen from each zone equivalent on school size, achievement level,
210 and socioeconomic status by the Antigua and Barbuda Ministry of Education, Science and
211 Technology. The research protocol was described to the five principals. All classes intervention
212 classes, grades 3 to 6, from all five schools, participated.

213 These schools received training and instruction on implementing C-SELF strategies. This comprised
214 of teachers and students from the five public primary schools in Zones 1 to 4 respectively in Antigua
215 and Barbuda. Teachers received one two-hour training seminar pre-intervention. The teachers and
216 students received 25-minutes of instruction during class time for ten-weeks. The teachers maintained
217 the C-SELF strategies daily as part of their curriculum for one academic school year. There was
218 weekly monitoring of programme fidelity. Support was provided by the researchers for the duration
219 of the one-academic year. Families were also invited to training programmes offered through the
220 schools on C-SELF-techniques.

221 **Research Design**

222 The major aim of the study was to assess the impact of the intervention by: (1) pre- and post-surveys
223 to measure the changes before and after the intervention, (2) comparing the changes when the
224 students are grouped by gender. Pre-post study design was used in this research. This design is not
225 very strong in determining causal relationships between the dependent and independent variables;
226 however, the study increased validity and effectiveness by using pre- and post-testing where tests are
227 conducted prior to intervention to determine confounders. A survey administered by teachers was
228 used in this study. Teachers observed and rated students' social-emotional competencies and
229 aggression based on their perception.

230 **Participants and Procedures**

231 For the purpose of this study, only School 2 and School 5 were selected. From School 2, 62 students
232 and from School 5, 219 students participated in the intervention. Nine teachers from these two
233 schools participated in rating students' behavior once before the implementation of the intervention
234 in 2017 and once one week after the termination of the intervention in 2018 using a paper-based
235 survey. On average, one teacher was responsible for rating, approximately 31 (31.2 rounded)
236 students, since the total for both schools was 281, and the total teachers were 9. For comparison
237 between pre- and post-tests, each student had a de-identifiable numerical code that only the
238 researchers and teachers were aware of. The de-identifiable numerical code was done based on the
239 order of data entry per school. After rating students, teachers kept the completed surveys in a locker
240 until the research team received them. The researchers entered data in a SPSS file using double data
241 entry (Day, Fayers, & Harvey, 1998).

242 The researchers got an Institutional Review Board approval. Prior to commencing any data
243 collection, informed consent was obtained from all participating teachers and pupils' parents. No
244 reference to individuals was made within the final report. All data was stored and secured. No
245 perceived harm, risk, or possible hurt was anticipated from this proposed intervention program. The
246 study was expected to enrich the curriculum in the participating school.

247 **Measures**

248 Two scales were used for teacher surveys. The first one was Tauck Family Foundation Formative
 249 Assessment Tool (2014), which is to measure teacher rated persistence (3 items), self-control (3
 250 items), and social competence (6 items) skills in children aged 8 to 12. Example items from
 251 persistence, self-control, and social competence sub-scales are “worked on tasks until they were
 252 finished”, “waited in line patiently”, “worked well with peers”, respectively. Teachers were asked to
 253 rate students’ behavior in the last quarter or since the last reporting time using a 4-point Likert scale
 254 ranged from “none of the time” to “all of the time”. Cronbach’s alpha for teacher survey in the
 255 previous literature was reported as: persistence $\alpha = 0.92$; social competence $\alpha = 0.97$; self-control α
 256 $= 0.82$ (Child Trends, 2014). The current study also found strong Cronbach’s alpha for these three
 257 sub-scales at both pre- and post-tests: persistence (pre- and post-test) $\alpha = 0.93$; social competence
 258 pre-test $\alpha = 0.94$ and post-test $\alpha = 0.96$; self-control pre-test $\alpha = 0.93$ and post-test $\alpha = 0.95$.

259 Second scale was Reactive/Proactive Aggression—FastTrack (Teacher Checklist), which is to
 260 measure teachers’ perceptions of children aged 4-18 in terms of proactive and reactive aggressive
 261 behavior. The measure has two subscales: reactive aggressive behavior (3 items) and proactive
 262 aggressive behavior (3 items). “When this child has been teased or threatened, he or she gets angry
 263 easily and strikes back” is an example item of proactive aggression. One example of reactive
 264 aggression I “this child threatens or bullies others in order to get his or her own way”. Teachers were
 265 asked to indicate how often each child exhibits certain aggressive behaviors using a 5-point Likert
 266 scale with the options of “never true” to “almost always true”. In the previous literature, strong
 267 internal consistency was reported: for reactive aggression, Cronbach’s alpha of 0.94 and for proactive
 268 aggression, Cronbach’s alpha of .90 were found (Dodge & Coie, 1987). Pre- and post-tests in the
 269 current study also confirmed high reliability of these two subscales: reactive aggression pre-test $\alpha =$
 270 0.93 and post-test $\alpha = 0.94$; proactive aggression pre-test $\alpha = 0.91$ and post-test $\alpha = 0.92$.

271 Demographic information was also asked using a few questions at the beginning of the survey.
 272 Gender was asked a question with two options of male and female. The researchers used an open-
 273 ended question to measure age. Class level was asked using a closed-ended question with six options
 274 ranged from Grade 3 to Grade 6.

275 **Data Analysis**

276 For the analysis, descriptive statistics were provided for the study’s key variables. A series of paired
 277 sample t-tests were conducted to examine changes in the five domains between pre- and post-tests in
 278 total and for each school, as well as for each gender group. Before running a t-test analysis,
 279 assumptions were investigated.

280 **1.1.1 Results**

281 **Participants**

282 Of 281 students participating in the intervention, teachers rated 221 (78.6%) students for a pre-test,
 283 post-test, or both without missing data. The majority (86.43%) were from School 5. Students were in
 284 Grades 3 to 6. The majority were male (61.2%). Students were between 7 and 13 years-old with the
 285 mean age of 10.14 (see Table 2).

286 **(INSERT TABLE 2 HERE)**

287

288 **Key Variables**

289 Teachers rated the students in 5 domains of persistence, self-control, social competence, reactive
 290 aggression, and proactive aggression before and after the intervention. Table 3 indicates descriptive
 291 information of these five domains for both pre- and post-tests, as well as for each school and in total
 292 for both schools. With potential response range between 1 and 4, in pre-test, the mean score of
 293 persistence, self-control, and social competence for both schools were reported 2.63, 2.74, and 2.73,
 294 respectively. In post-test, the mean score of persistence, self-control, and social competence was
 295 found 2.78, 2.92, and 2.84, respectively. Reactive and proactive aggression had the potential response
 296 range of 1 to 4. In the pre-test, reactive aggression of 1.97 and proactive aggression of 1.26 were
 297 reported for both schools. In the post-test, reactive aggression and proactive aggression were found
 298 1.87 and 1.34, respectively.

299 **(INSERT TABLE 3 HERE)**

300

301 **T-Test Analysis**

302 The researchers conducted two sets of t-test analysis. First, to examine differences between pre- and
 303 post-test in the 5 domains of study, a t-test was run for each school and for both schools together.
 304 Table 4 shows the results for each school and each domain as well as for all schools. In School 2,
 305 reactive aggression is decreased significantly post-intervention. The researchers found significant
 306 improvement in domains of persistence, self-control, as well as social competence in School 5;
 307 however, proactive aggression has increased after the intervention. Looking at the data in total, the
 308 researchers found significant increase in persistence and self-control, as well as in proactive
 309 aggression.

310 **(INSERT TABLE 4 HERE)**

311 Further, a t-test was run to examine differences between pre- and post-test for each gender category.
 312 Table 5 presents results of this analysis. Both males and females experienced significant
 313 improvement in self-control post intervention. Although female students indicated significant
 314 decrease in reactive aggression, boys showed significant increment in proactive aggression.

315 **(INSERT TABLE 5 HERE)**

316 Before running the t-tests, assumptions were inspected. Dependent variables were measured at the
 317 continuous level. No significant outliers were detected. According to skewness and kurtosis values,
 318 dependent variable in four domains of persistence, self-control, social competence, and reactive
 319 aggression were normally distributed. Proactive aggression domain had not a normal distribution;
 320 however, the researchers proceeded the analysis as t-test is robust to violation of this assumption.

321 **1.1.1.1 Discussion**

322 Schools are instrumental in helping to shape students' self-regulation, self-esteem, and self-efficacy.
 323 Their impact is wide-ranging as their influence on cognitive and social development is long-term.
 324 School children and adolescents in public schools in the Caribbean spend a large portion of their day
 325 (minimum six hours) and year (September to June) at school. The traditional model of schools
 326 reduced its role to that of an academic institution. However, school provides the greatest access to
 327 large numbers of children and adolescents to help shape their minds, emotions, and behaviors. Social,
 328 emotional, and behavioral health and learning integration increases the probability for improved

329 academic outcomes, fosters positive social-emotional development, and teaches life-long learning
 330 skills, and strengthens mental and emotional fitness in every student. The comprehensive strategy
 331 targeted at changing cultural and behavioral patterns that promote a violent reaction to conflict can be
 332 reduced through C-SELF integration into the daily school curriculum.

333 The impact of social-emotional learning is far reaching and sustainable. These are life-long
 334 proficiencies that foster both personal and social wellbeing, reducing the long-term costs to society,
 335 the environment, and governments over time. Social-emotional and non-cognitive skills are highly
 336 malleable for enduring results (Jones, Greenberg, & Crowley, 2015; Moffitt et al., 2011). Research
 337 has shown that the development of non-cognitive skills such as self-control “might reduce a panoply
 338 of societal costs, save taxpayers money, and promote prosperity” (Moffitt et al., 2011).

339 **Ethical Considerations**

340 Prior to commencing any data collection, informed consent was obtained from all participating
 341 teachers and pupils’ parents. No reference to individuals was made within the final report. All data
 342 was stored and secured. No perceived harm, risk, or possible hurt was anticipated from the proposed
 343 intervention program. The study was anticipated to enrich the curriculum in the participating school.

344 **Limitations**

345 Not having meaningful results in student surveys might be attributed to students' lack of familiarity
 346 with how to respond to surveys in Antigua and Barbuda. One of the key limitations for the study was
 347 the academic developmental level of the students in each school. It was quickly realized that some of
 348 the students in Grades 3 and 4 had difficulty doing the surveys on their own. In some schools, most
 349 of the students in Grades 3 and 4 needed the questions to be read out loud and in some cases
 350 explained. This could indicate that students might not be performing at the expected levels, which
 351 could be caused by numerous factors, or the assessment tool might have been difficult for them to
 352 understand possibly due to verbiage and cultural reasons, rather than limited cognitive capacities.

353 **Recommendations for Future**

354 For school-aged children and adolescents, school experience is an important part of their entire
 355 development and lays the groundwork for them to succeed (Morrison, LeBlanc, & Doucet, 2005). Of
 356 importance is the idea of fostering social, emotional, and behavioral learning such as self-efficacy
 357 and self-regulation. These are, in fact, a principal factor in determining success (Harris, Graham,
 358 Mason, & Sadler, 2002). They help to drive student motivation and engagement to attain positive
 359 learning outcomes. However, most students fall short in self-regulatory abilities and need to be taught
 360 self-efficacy strategies (Zumbrunn, Tadlock, & Danielle Roberts, 2011). Graham and Harris (2000)
 361 showed that even small amounts of time devoted to self-regulation strategies can improve learning
 362 outcomes.

363 **Social, emotional, and behavioural health and curriculum**

- 364 1. Integrating social, emotional, and behavioral health into the school curriculum is a preventive
 365 measure that teaches students healthy coping styles that diminish the chance of developing
 366 problems, prevents violence and risk behaviors, and increases academic achievement. The
 367 benefits of C-SELF into the school curriculum are multifaceted:
- 368 2. Improved academic performance: Mentally healthy students learn better (Greenberg et al.,
 369 2003; Durlak & Wells, 1997). Social and emotional learning (SEL) programs are shown to
 370 improve academic performance by between 11 to 17 percentage points (Payton et al., 2008),
- 371 3. Self-esteem improves academic outcomes (Colquhoun & Bourne, 2012),

- 372 4. Mentally healthy children are less likely to engage in problem behaviours, such as violence,
 373 delinquency, substance abuse, and risky sexual behaviours. School-based prevention
 374 programs have been shown to reduce the incidence of problem behaviors (Battistich, et al.,
 375 2004; Beets et al., 2009),
- 376 5. Students who can manage their emotions can more effectively focus on learning, as anxiety
 377 reduces the working memory that is necessary for most learning (Evans & Schamberg, 2009),
- 378 6. Children's psychosocial challenges often manifest as a decrease in performance in schools
 379 (Atkins, et al., 2002). Mentally healthy students show enhanced psychosocial capabilities,
 380 such as self-confidence, self-esteem, and communication (Flook, Goldberg, Pinger, &
 381 Davidson, 2015),
- 382 7. Social and emotional competency positively impacts long-term behaviour, social interactions,
 383 and learning outcomes even when other variables—such as socioeconomic status and
 384 academic aptitude—are factored out (Jones et al., 2015),
- 385 8. Social-emotional skills are the great equalizer. They can reduce the discrepancy in
 386 achievement across all socioeconomic platforms. They diminish the disparities that exist
 387 between the underprivileged, who show statistically poorer academic outcomes, and those
 388 who are socially advantaged (Diamond, 2010, 2013). Studies show that socio-economically
 389 disadvantaged children have weaker executive functions (e.g., impulse control, self-
 390 regulation, etc.) when compared to children from more privileged backgrounds. Social-
 391 emotional learning strengthens executive functions allowing children to be more focussed,
 392 emotionally regulated, and accomplished (Moffitt et al., 2011; Fritzell & Ritakallio, 2010),
- 393 9. Social-emotional skills are shown to improve academic outcomes. Studies suggest that
 394 executive functions more than two times surpass IQ in predicting academic performance, even
 395 in college (Duckworth & Seligman, 2005),
- 396 10. Studies show that school-based interventions have incredible cost savings in the long term as
 397 they will support the development of healthy young productive adults (National Research
 398 Council (US) and Institute of Medicine (US) Committee on the Prevention of Mental
 399 Disorders and Substance Abuse Among Children, Youth, and Young Adults, 2009), and
- 400 11. There is a greater chance of students succeeding when a positive school culture is endorsed
 401 (Bradshaw, Koth, Thornton, & Leaf, 2009).

402

403 **Conflict of Interest Statement**

404 The authors declare that the research was conducted in the absence of any commercial or financial
 405 relationships that could be construed as a potential conflict of interest.

406

407 **Contribution to the Field Statement**

408 There are no structured programs responding to youth violence and the social, emotional, and
 409 behavioral well-being amongst students in the Caribbean. There has been little data collected and
 410 organized research conducted on the efficacy and impact of programs, which may combat youth
 411 violence and improve behavioral health. Without rigorous impact evaluations, the region continues to
 412 lack effective and sustaining strategies for preventive programs. Because empirical data mostly
 413 comes from studies done in high-income countries, their adaptability is at question for the low- and
 414 middle-income Latin America and Caribbean (LAC) region as the causes of violence and mental
 415 health well-being may be specific to the region. The study shares outcomes from the implementation
 416 of the social-emotional health strategy embedded into the curriculum in five schools in Antigua and

417 Barbuda. The findings suggest positive outcomes, without significance, in decreased depression,
 418 anxiety, self-control, and competence. This new data offers insight into how we capture and deploy
 419 effective resources. It demonstrates the importance of socio-emotional learning curriculum to
 420 improve children’s self-regulated behaviors and self-management skills. More longitudinal studies in
 421 the future are needed especially to study where socio-emotional learning strategies help to reduce
 422 aggression, particularly those which may lead to violence in the LAC region.

423

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430

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434

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584

585 **Table 1: C-SELF Modules**

586

C-SELF Modules		
<p>Module 1: Mindfulness using breathing and focused attention techniques, and emotional awareness through emotional identification to meet the emotional regulation, self-awareness, and impulse control elements of the self-management.</p> <p>Module 2: Mindfulness using breathing and focused attention techniques, emotional awareness through emotional identification, somatic awareness through body focusing, and positive percepts through emotional focusing to meet the emotional regulation, self-awareness, and impulse control elements of the self-management objective and the positive affect of the resiliency objective.</p> <p>Module 3: Mindfulness using breathing and focused attention techniques, emotional awareness through emotional identification, somatic awareness through body focusing, positive percepts through emotional focusing, and self-esteem building through positive self-reinforcement to meet the emotional regulation, self-awareness, and impulse control elements of the self-management objective, the</p>	<p>Module 5: Mindfulness using breathing and focused attention techniques, emotional awareness through emotional identification, somatic awareness through body focusing, positive percepts through emotional focusing, self-esteem building through positive self-reinforcement, self-efficacy strengthening through positive refocusing, and self-compassion fostering to meet the emotional regulation, self-awareness, and impulse control elements of the self-management objective, the ability to manage challenges, positive affect, and self-compassion aspects of the resiliency objective, and the self-esteem facet of the self-efficacy objective.</p> <p>Module 6: Mindfulness using breathing and focused attention techniques, emotional awareness through emotional identification, somatic awareness through body focusing, positive percepts through emotional focusing, self-esteem building through positive self-reinforcement, self-efficacy strengthening through positive refocusing, and self- and other-compassion fostering to meet the emotional regulation, self-awareness, and impulse control elements of the self-management objective, the ability to manage challenges, positive affect, and self-compassion aspects of the resiliency objective, the self-</p>	<p>Module 8: Mindfulness using breathing and focused attention techniques, emotional awareness through emotional identification, somatic awareness through body focusing, positive percepts through emotional focusing, self-esteem building through positive self-reinforcement, self-efficacy strengthening through positive refocusing, motivation building through goal setting, and self- and other-compassion through perspective-taking to meet the emotional regulation, self-awareness, and impulse control elements of the self-management objective, the ability to manage challenges, positive affect, and self-compassion aspects of the resiliency objective, the self-esteem facet of the self-efficacy objective, perseverance of the self-responsibility objective, and other compassion, caring, and perspective-taking of the pro-sociality objective.</p> <p>Module 9: Mindfulness using breathing and focused attention techniques, emotional awareness through emotional identification, somatic awareness through body focusing, positive percepts through emotional focusing, self-esteem building through positive self-reinforcement, self-efficacy strengthening through positive refocusing, motivation building through goal setting, and self- and other-compassion through</p>

<p>positive affect aspect of the resiliency objective, and self-esteem facet of the self-efficacy objective.</p> <p>Module 4: Mindfulness using breathing and focused attention techniques, emotional awareness through emotional identification, somatic awareness through body focusing, positive precepts through emotional focusing, self-esteem building through positive self-reinforcement and self-efficacy strengthening through positive refocusing to meet the emotional regulation, self-awareness, and impulse control elements of the self-management objective, the ability to manage challenges and positive affect aspects of the resiliency objective, and the self-esteem facet of the self-efficacy objective.</p>	<p>esteem facet of the self-efficacy objective, and other compassion, caring, and empathy of the pro-sociality objective.</p> <p>Module 7: Mindfulness using breathing and focused attention techniques, emotional awareness through emotional identification, somatic awareness through body focusing, positive precepts through emotional focusing, self-esteem building through positive self-reinforcement, self-efficacy strengthening through positive refocusing, self-compassion fostering, and motivation building through goal setting to meet the emotional regulation, self-awareness, and impulse control elements of the self-management objective, the ability to manage challenges, positive affect, and self-compassion aspects of the resiliency objective, the self-esteem facet of the self-efficacy objective, and perseverance of the self-responsibility objective.</p>	<p>perspective-taking to meet the emotional regulation, self-awareness, and impulse control elements of the self-management objective, the ability to manage challenges, positive affect, and self-compassion aspects of the resiliency objective, the self-esteem facet of the self-efficacy objective, perseverance of the self-responsibility objective, and other compassion, caring, and perspective-taking of the pro-sociality objective.</p> <p>Module 10: Integration of programme to meet all objectives.</p>
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587

588 **Table 2: Students' Descriptive Information (N = 221)**

589

Variables	Categories	n(%)	Range	M(SD)
School	School 2	30(13.57%)		
	School 5	191(86.43%)		
Grade	Grade 3	48(21.72%)		
	Grade 4	57(25.79%)		
	Grade 5	57(25.79%)		
	Grade 6	59(26.70%)		
Gender	Female	85(38.8%)		
	Male	134(61.2%)		
Age		211	7-13	10.14(1.31)

590

591 **Table 3: Descriptive Information of the Study's Key Variables**

592

Phase	Domains	School 2		School 5		Total	
		n	M(SD) ₁	n	M(SD) ⁴	n	M(SD) ⁴
Pre-Test	Persistence	14	3.12(.59) ₁	167	2.59(.86)	181	2.63(.85)
	Self-control	14	3.14(.62) ₁	167	2.71(.77)	181	2.74(.77)
	Social Competence	14	3.01(.57) ₁	167	2.71(.66)	181	2.73(.65)
	Reactive Aggression	14	2.71(.57) ₂	168	1.91(.89)	182	1.97(.89)
	Proactive Aggression	14	1.29(.34) ₃	168	1.25(.65)	182	1.26(.63)
Post-Test	Persistence	30	2.71(.82) ₄	84	2.80(.89)	114	2.78(.87)
	Self-control	30	2.87(.84) ₄	84	2.94(.85)	114	2.92(.84)
	Social Competence	30	2.69(.62) ₅	84	2.89(.73)	114	2.84(.71)
	Reactive Aggression	30	2.10(.72) ₆	84	1.79(.91)	114	1.87(.87)
	Proactive Aggression	30	1.37(.51) ₇	84	1.33(.66)	114	1.34(.62)

Notes: (1) Ranged between 2 and 4; (2): Ranged between 1.67 and 3.67; (3): Ranged between 1.00 and 2.00; (4): Ranged between 1.00 and 4.00; (5): Ranged between 1.33 and 3.67. (6): Ranged between 1.00 and 3.33; (7): Ranged between 1.00 and 3.00;

593

594 **Table 4: T-Test Comparing Pre- and Post-Tests across Schools and in Total**

595

Domains	School 2		School 5		Total	
	t(df)	Diff M ¹	t(df)	Diff M ¹	t(df)	Diff M ¹
Persistence	1.25(13)	.14	-2.49(59)*	-.24	-2.02(73)*	-.17
Self-control	.74(13)	.10	-4.20(59)**	-.36	-	-.27
Social Competence	1.74(13)	.17	-2.25(59)*	-.15	-1.56(73)	-.09
Reactive Aggression	5.15(13)**	.62	-1.24(60)	-.11	.26(74)	.02
Proactive Aggression	.43(13)	.05	-2.57(60)*	-.16	-2.2(74)*	-.12

Note (1): pre-test minus post-test

596

597

598 **Table 5: T-Test Comparing Pre- and Post-Tests across Gender**

599

Domains	Female		Male	
	t(df)	Diff M ¹	t(df)	Diff M ¹
Persistence	-1.11(25)	-.14	-1.68(47)	-.18
Self-control	-3.88(25)**	-.38	-2.06(47)*	-.22
Social Competence	-1.59(25)	-.20	-.57(47)	-.04
Reactive Aggression	3.41(25)**	.41	-1.79(48)	-.18
Proactive Aggression	.00(25)	.00	-2.40(48)*	-.18

Note (1): pre-test minus post-test

600

601