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1 Title

- 2 Feasibility and efficacy of the Great Leaders Active StudentS (GLASS) program on
- 3 children's physical activity and object control skill competency: a non-randomised trial

4	Abstract
5	Objectives
6	This study aimed to assess the feasibility and efficacy of the Great Leaders Active StudentS
7	(GLASS) program, a school-based peer-led physical activity and object control skill
8	intervention.
9	
10	Design
11	The study employed a quasi-experimental design.
12	
13	Methods
14	The study was conducted in two elementary schools, one intervention and one comparison, in
15	Newcastle, New South Wales (NSW), Australia from April to June 2015 ($N = 224$ students).
16	Peer leaders ($n = 20$) in the intervention school received training to deliver two 30-minute
17	object control skill sessions per week to students in Kindergarten, Grades 1 and 2 (5-8 years,
18	n=83) over one school term (10 weeks). The primary outcome was pedometer assessed
19	physical activity during school hours. Secondary outcomes included students' object control
20	skill competency and peers' leadership self-efficacy and teacher ratings of peers' leadership
21	skills.
22	
23	Results
24	Almost all (19/20) GLASS sessions were delivered by peer leaders who reported high
25	acceptability of the program. The treatment-by-time interaction for students' physical activity
26	during school hours was not significant ($p = 0.313$). The intervention effect on students'
27	overall object control skills was statistically significant (mean difference 5.8 (95% CI 4.1,
28	7.4; $p < .001$)). Teacher-rated peer leadership significantly improved (0.70; 95% CI 0.38-

- **29** 1.01); *p* < .001).
- 30

31 Conclusions

32 The GLASS program was found to be both feasible and acceptable. The intervention also

33 resulted in improvements in students' overall object control skills as well as teacher-rated

34 peers' leadership behaviours. Future fully powered trials using peer leaders to deliver

35 Fundamental Movement Skill (FMS) programs are warranted.

36

37 Trial Registration No: ACTRN12615000331538

- **Key words:** School; motor activity; leadership; peer-group; FMS

40 Introduction

41 Global trends show participation in at least 60 minutes of moderate-to-vigorous physical

42 activity (MVPA) per day is essential for children's healthy growth and development.¹

43 Furthermore, regular physical activity has been found to improve children's social, cognitive

44 and psychological health.² Despite this, international research indicates that many elementary

45 school-aged children are not sufficiently active.³ Given the importance of physical activity

46 during childhood, interventions to improve children's physical activity levels has been

- 47 identified as a public health priority.⁴
- 48

Schools provide an ideal opportunity to improve the physical activity levels of children, as 49 they afford almost universal access to children during crucial phases in their development.² In 50 addition, school-based physical activity can provide children with the opportunity to develop 51 fundamental movement skills (FMS);⁵ the building blocks required for participation in a 52 variety of physical activities.⁶ Moreover, a recent Australian study involving 460 children 53 54 form eight Australian primary schools found that object-control skill competency was more strongly associated with children's MVPA than locomotor skill competency.⁷ Accordingly, 55 school-based physical activity interventions, which include opportunities to develop FMS, 56 have been recommended.⁸ However, there is limited understanding of the most effective 57 school-based strategies to improve children's physical activity.⁹ Therefore, potential novel 58 approaches for such interventions are warranted. 59

60

Peer teaching, involving the education of young people by young people, has previously been 61 used to improve students' health behaviours.¹⁰ Evidence suggests that peers can significantly 62 influence the type and intensity of physical activity pursued by children.¹¹ However few 63 studies have investigated the efficacy of using peer-teachers to improve elementary school 64 65 students' physical activity. A cluster randomised controlled trial conducted in 19 Canadian 66 elementary schools used students in Grades 4-6 to deliver messages related to, nutrition, physical activity and healthy body image to students in Kindergarten to Grade 3.12,13 The one-67 year intervention found younger students in the intervention group had; a significant decline 68 69 in mean waist circumference (-1.42; 95% CI, -2.28 to -0.56), as well as improvements in self-70 reported dietary behaviours, but no effect on physical activity. Peer-led physical activity 71 interventions in secondary schools suggest such interventions may hold promise. For 72 example, a randomised trial conducted in six Australian secondary schools which trained 73 Grade 9 boys to deliver lunch-time physical activity sessions to Grade 7 boys found a

radiate significant group-by-time interaction effect for BMI (mean difference=-0.8 kg/m(-2),

- p < 0.001, d = 0.70), for students in the intervention group at 6-month follow-up.¹⁴
- 76 While such peer-led interventions have focused on a range of outcomes to date no previous
- research has examined the effects of peer-led intervention on FMS¹⁵; this is a notable
- exclusion given children who are proficient at FMS are more likely to be physically active.⁸
- 79 Thus, the primary aim of this study was to assess the feasibility and preliminary efficacy of a
- 80 10-week school-based peer-led physical activity intervention on children's (aged 5-8)
- 81 physical activity during school hours. The secondary aim of the study was to explore the
- 82 effects of the intervention on children's object control skills competency and peer leaders'
- 83 self-efficacy for leadership and their leadership behaviors, as assessed by their respective
- 84 teachers.
- 85

86 Methods

A non-randomised controlled feasibility trial was undertaken in two elementary schools in
Newcastle, New South Wales (NSW), Australia. The trial was approved by the University of
Newcastle Human Research Ethics Committee (H-2011-0214) and the Maitland-Newcastle
Catholic Schools Office.

91

92 In March 2015 the principals of two matched Catholic elementary schools were invited to 93 participate in the study (one intervention the other comparison). All students in Kindergarten, Grade One and Grade Two (aged 5-8 years) were eligible to participate in the program. 94 95 Information letters and parent consent forms were sent home with students. Only those children who returned signed consent forms and did not currently have a medical condition or 96 97 physical injury preventing testing were permitted to participate in outcome assessment. All 98 students in Grade Six (aged approximately 11-12 years; hereafter referred to as peer leaders) 99 were invited to take part in the study via information letters and consent forms sent to 100 parents.

101

102 The Great Leaders Active StudentS (GLASS) program was designed to be delivered by peer

- 103 leaders over one school term (10 weeks). GLASS was based on the peer leadership
- 104 component of the Supportive Children's Outcome using Rewards, Exercise and Skills
- 105 (SCORES) intervention⁷ and was adapted using the tenets of transformational leadership
- 106 theory.¹⁶ Students in Kindergarten to Grade 2, were placed into groups of 10-12 students by
- 107 their classroom teachers, and attended two 30-minute FMS sessions per week for 10 weeks.

108 Two peer leaders were allocated to each group and remained with the same students for the

- 109 duration of the study; a specific strategy to help develop rapport between the peer leaders and
- their groups. To support the delivery of GLASS, the intervention school received 18 FMS
- equipment packs valued at approximately A\$4,000.Two weeks prior to GLASS beginning,

112 peer leaders attended a three hour leadership training session which included;

- a. Peer leadership training. Modelled on the tenets of transformational leadership theory,¹⁷
- 114 peer leaders were provided with a practical overview and examples of the four dimensions of
- transformational leadership. These include *idealized influence* (acts as a role model, fosters
- trust and respect among others), *inspirational motivation* (displays optimism, enthusiasm, and
- 117 having high expectations in terms of what others can accomplish), *individualized*
- 118 *consideration* (displays care and concerns for others, exhibits empathy and compassion), and
- *intellectual stimulation* (encourages others to think for themselves and approach obstacles
- and challenges from different perspectives). To present this framework in age-appropriate
- terms the four leadership dimensions were referred to as role modeling, motivating others,
- 122 considering others, and helping students to think.
- b. FMS training. Students were taught the correct movement skill pattern for three objectcontrol skills (catch, underarm and overarm throw) and modelled the structure of a FMS
- session which included: (1) an introduction to the skill, (2) a warm-up game, (3) skill
- development with key teaching points, (4) skill application to a small-sided game and (5)
- 127 cool-down and closure. As a guide peer leaders were recommended to spend approximately
- 128 two minutes on the introduction, five minutes on the warm-up, eight minutes on skill
- development, 15 minutes on skill application and three minutes on the cool-down and
- 130 closure. Peer leaders were trained to provide basic teaching cues, individualized feedback and
- 131 opportunities to practice movement skills in a supportive, fun and encouraging environment.
- 132 In week five of the intervention, the peer leaders received a one-hour booster training session
- 133 where they were reminded of the key aspects of transformational leadership and taught the
- remaining three object control skills (kick, two-handed strike and dribble) as per the initial
- training session. Peer leaders were encouraged to spend approximately three lessons on each
- 136 of the object control skills. Peer leaders received a whistle and a handbook, which reinforced
- 137 what they had learnt during the training. The Grade 6 teacher was provided with a class set of
- 138 laminated "lesson-plans" that the peer leaders could use to remind them of the lesson
- 139 structure and tips and hints for each. At the end of the first GLASS session members of the
- 140 research team debriefed with the peer leaders to discuss any challenges, concerns and
- 141 problem solve ideas for running GLASS with their groups. In weeks two and three, peer

leaders were observed by members of the research team and provided with feedback using astructured checklist regarding their delivery of the five components of the GLASS session.

144

145 Trained research assistants, blinded to group allocation collected baseline data prior to intervention delivery (April 2015) and directly following intervention delivery (June 2015). 146 Children's demographics were collected at baseline (see Table 1). The physical activity of 147 148 students in Kindergarten to Grade Two was measured using a validated Yamax© SW200 digiwalker pedometer for five consecutive school days. Pedometers were checked, sealed 149 150 then attached to the waistband of each child's clothing (right hip, in line with the knee) at the start of each school day (i.e., 9:00am) and collected at the end of each school day (i.e., 151 152 3:00pm). Students' object control skill competency (stationary dribble, kick, catch, overhand 153 throw and underhand throw and wo handed strike) was assessed using the Test of Gross Motor Development-3 (TGMD-3) (an updated version of the TGMD-2¹⁸ set for formal 154 release in the near future).¹⁹ Participants were videotaped performing two trials of each of the 155 six skills. Research assistants, blinded to group allocation, assessed the videos according to 156 behavioural components. Each skill component was scored a "1" if observable and performed 157 correctly; if they performed it incorrectly the component was given a score of "0". This 158 159 procedure was completed for each of the two trials, and trial scores were summed to calculate 160 a total score for each skill. An overall object control skill score was calculated by summing the skill scores.¹⁸ Teachers were asked to rate students' leadership skills using an adapted and 161 shortened version of the Transformational Teaching Questionnaire (TTQ).²⁰ Measures 162 derived from the TTQ have been found to display sound internal consistency and factorial 163 validity. In this study, peer leadership was assessed through the following items (each 164 165 prefixed by 'The peer leader that I'm rating'): 'behaves as someone that other students can 166 trust' (idealized influence), 'is enthusiastic about what other students are capable of 167 achieving' (inspirational motivation), 'show that s/he cares about the students s/he is teaching' (individualised consideration), and 'encourages students to think for themselves' 168 (intellectual stimulation). Responses to items were anchored on a 5-point Likert-type scale by 169 0 (Not at all) to 5 (Frequently). The four item composite measure of peer leadership 170 171 displayed acceptable internal consistency at baseline (α =.89) and post-test (α =.92). Student leaders were asked to completed a ten-item measure of their perceived leadership self-172 efficacy at baseline and follow-up.²¹ Using a five-point Likert scale ($1 = disagree \ a \ lot$ to 5 =173 agree a lot) peer leaders were asked to respond to items that assessed if they were good 174 175 listening to and considering others, organising and motivating other students, and speaking in

176 front of a group. The ten-item composite measure of perceived leadership self-efficacy was found to have acceptable internal consistency (α =.78) at baseline and post-test (α =.80). To 177 178 assess peer leaders' acceptability of the intervention at the completion of the GLASS 179 intervention Grade 6 students were asked to complete a ten-item survey which asked if they 180 agreed 'a lot' (3 points), 'a little' (2 points) or 'not really' (1 point) to questions related to (a) 181 their enjoyment of the GLASS program, training received, the length of each session and 182 being a GLASS leader, (b) the perceived usefulness of resources and feedback provided, and (c) their perception that the program helped them to be a better leader and that the students in 183 184 the group enjoyed the program.

185

186 The comparison school was asked to follow usual practice during the study period. At the 187 completion of follow-up data collection, Grade 6 students in the comparison group school

188 were offered the leadership training and the school received all intervention materials.

189

Analyses were conducted using SPSS version 20.0. Students' SES was determined using 190 191 household postcode and the Socio- Economic Indexes For Areas (SEIFA) of relative socioeconomic disadvantage (scale: 1 =lowest to 10 = highest).²² Due to the non-random 192 193 allocation of groups, baseline differences between intervention and comparison groups for 194 key demographic variables [i.e., sex, age and household socio-economic status (SES)] were 195 tested using independent samples t-tests and Chi square tests. No significant differences between groups were found for sex (p = .403) or age (p = .299), but SES values were 196 197 significantly higher among participants in the comparison group. Linear mixed models were used to assess the effects of treatment (GLASS or comparison), time (treated as categorical 198 199 with levels specified as baseline and 10 weeks) and the treatment-by-time interaction, these 200 three terms forming the base model. SES was included as a covariate in the mixed models due to baseline differences and because physical activity often differs according to SES.²³ 201 202 Sex was explored as a potential moderator of intervention effects using an interaction term 203 (i.e., intervention by treatment by sex). If significant moderator effects were observed (p < p0.1 stratified sub-group analyses were conducted The mixed models were specified to adjust 204 205 for the clustered nature of the data (using a random intercept for school class) and all analyses were consistent with the intention-to-treat principles.²⁴ Effect sizes were also calculated. 206

207

208 Results

209 Parental consent was received from 174 of the 176 (98.9%) Kindergarten, Grade 1 and Grade

210	2 students and all 50 (100.0%) of the Grade 6 students (participants' characteristics in Table				
211	1).The treatment-by-time interaction for physical activity was not significant (mean				
212	difference 370; 95% CI -474, 1214; $p = 0.313$) (Table 2). In respect to the secondary				
213	outcomes there were significant treatment-by-time interaction effects for overall object				
214	control skill competency (mean 5.8; 95% CI 4.1- 7.4; p<.001) and for all individual skills,				
215	except the kick (mean 0.4; 95% CI4 - 1.3; p= 0.266) (Table 2). Sex emerged as a				
216	significant moderator of the intervention effect on the strike ($p = .081$). Sub-group analyses				
217	indicated a slightly stronger effect among boys (1.6 units, 95% CI .32 to 2.89, $p = .023$), in				
218	comparison to girls (1.2 units, 95% CI .41 to 2.06, $p = .004$). Intervention effects across all				
219	other outcomes did not differ by sex. There was also a treatment-by-time interaction effect				
220	for teacher-rated peer leadership with intervention peer leaders scoring higher (0.70; 95% CI				
221	0.38-1.01); p< .001).				
222 223	INSERT TABLE 1 & 2				
224 225	Almost all (19/20) of the GLASS sessions were delivered by the peer leaders, with one				
226	session cancelled due to inclement weather. All peer leaders received the three-hour				
227	leadership training session, the one-hour booster training session, at least two observational				
228	feedback and all resources (i.e., student handbook and whistle). Table 3 below shows the				
229	mean acceptability scores (out of 3) among peer leaders related to the GLASS program.				
230 231 232	INSERT TABLE 3				
233	Discussion				
234 235	This study sought to evaluate the feasibility and preliminary efficacy of a peer led physical				
236	activity intervention focused on the development of children's object control skill				
237	competency. Our study demonstrated that elementary school students can be trained to				
238	deliver a physical activity program with all peer leaders participating in the program and				
239	delivering almost all of the sessions. While the treatment-by-time interaction effect for				
240	physical activity was not significant, there was a significant treatment-by-time effect for				
241	children's overall object control skill competency and five of six object-control skills.				
242	Furthermore, there was also a significant treatment-by-time interaction effect for teacher-				
243	rated peer leadership.				

245 Although the treatment-by-time effect for children's physical activity was not statistically

- significant, the results were in the hypothesized direction. These findings are not surprising
- 247 given that recent evidence suggests that multi-component school-based interventions are
- 248 needed to significantly increase students physical activity levels.^{2,7} Nevertheless, the findings
- of this study suggest that the GLASS program may be one important component of a
- 250 comprehensive school physical activity program.

There was however, a significant effect on children's object control skill competency, which 251 is an encouraging finding given the association between children's object control skill 252 253 competency and physical activity and fitness.⁸The findings of the study hold promise given the potential scalability of the program.²⁵ Other studies that have seen similar improvements 254 in students' FMS competency have often involved intensive, multi-component interventions,⁸ 255 often relying on the classroom teacher to deliver. The use of multiple peer-leaders to deliver 256 257 the program may reduce the burden on teachers and hence improve the sustainability of the 258 programme. Whilst this study utilized face-to-face training of the peer leaders the scalability 259 of GLASS could be enhanced by adopting, a 'train the trainer' model, whereby teachers are 260 trained to up-skill student peer leaders.

261

262 The development of students' leadership skills provides numerous social and educational 263 benefits for individual students as well as the whole school community. Indeed, a physical 264 activity intervention that provides students with an opportunity to develop leadership skills may be appealing to schools and act as a 'hook' to ensure uptake.²⁶ Although students' 265 266 leadership self-efficacy beliefs did not significantly improve when compared to the control 267 students, teachers' ratings of students' leadership skills did. This is particularly notable given 268 that these measures were based on third party assessments, and thus less susceptible to selfreport bias. Therefore, as much as GLASS was a physical activity intervention it could 269 270 equally be promoted to schools as a leadership program, as it requires peer leaders to act in 271 roles of responsibility, work with others to achieve goals, be active, be reflective listeners and 272 earn the respect of others.

273

The data presented in this study suggest that the GLASS program is both feasible and

acceptable to schools and students. Adherence to delivery of the program was excellent with

- almost all sessions being delivered as planned; a notable achievement given the busy
- 277 schedules of schools. Encouragingly the peer-leaders reported very high satisfaction levels

with the program as well as the training which is in contrast to systematic review findings of
peer led interventions¹⁰ which have reported that students often feel their training did not
adequately prepare them enough to deliver the intervention. It suggests that the model of
support provided to peer leaders in this study may have allayed peer leaders' concerns about
feeling unprepared which is likely to have had a positive effect on the quality of the program

- 283 being delivered.
- 284

285 To the authors' knowledge, this is the first study to use peer leaders in an elementary school setting to deliver a physical activity intervention focused on the development of object control 286 skill competency. It is strengthened by the use of blinded assessors, objective measures and 287 288 high rates of consent and retention. However, there are some inherent limitations that should be noted. First, the study used step counts from pedometers as the primary outcome and we are 289 290 therefore unable to determine the intensity of engagement in physical activity. Secondly, the 291 study only examined school-time physical activity; therefore the intervention effect on overall 292 physical activity cannot be determined and should be investigated in future studies. Thirdly, 293 the study is also limited by the lack of information on the acceptability of the program by 294 teachers and the younger students. If a future trial is undertaken further work that collects qualitative data from interviews with teachers, and focus groups with the children is needed. 295 296 Fourthly, it is conceivable that the intervention may have also impacted on peer-leaders 297 physical activity and object control skills; however this was never measured as part of this study. The inclusion of such measures for peer-leaders in future studies would enhance the 298 saliency of the program. Furthermore, it is likely that intervention effects may be improved 299 with active engagement of parents,²⁷ thus investigating ways to effectively involve children's 300 parents in the GLASS intervention may be considered. 301

302

303 Conclusion

304 This study demonstrated that a peer-led physical activity intervention is feasible to implement

and be enjoyed by and acceptable to peer leaders. The GLASS program represents a

- 306 promising novel venture that resulted in significant improvements in children's object control
- 307 skill competency and leadership skills of peer leaders, suggesting a full powered trial is
- 308 warranted.
- 309

310 Practical implications

- Provides evidence that elementary school peer leaders can be trained to deliver a physical
 activity intervention to younger students.
- The GLASS intervention significantly improved children's object control skill
 competency, which is important as such skills are significantly associated with children's
 physical activity levels.
- The leadership skills of peer-leaders significantly improved providing schools' an
- alternative method of providing leadership opportunities to all older elementary schoolstudents in a school.
- 319

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Characteristics	Comparison (n = 91)	Intervention (n = 83)	Total (N = 174)
Participants (K- Grade 2) ^a			
Age, mean (SD), y	6.1 (0.9)	6.1 (0.9)	6.1 (0.9)
Sex			
Female	47 (51.6)	40 (48.2)	
English language spoken at home, n (%)	87 (95.6)	83 (100)	170 (97.7)
Cultural background, n (%) ^b			
Australian	75 (82.4)	83 (100)	158 (90.8)
European	3 (3.3)	-	3 (1.7)
African	-	-	-
Asian	-	-	-
Middle eastern	-	-	-
Other	11 (12.1)	-	11 (6.3)
Aboriginal Torres Strait Islander, n (%)	1 (1.1)	1 (1.2)	2 (1.1)
SES, mean (SD)	8.7 (1.9)	6.9 (1.7)	7.9 (2.0)
Participants (Grade 6) ^c	n = 30	n = 20	N = 50
Age, mean (SD), y	11.0 (0.4)	11.0 (0.3)	11.0 (0.4)
Sex			
Female	11 (36.7)	12 (60.0)	
English language spoken at home, n (%)	27 (90.0)	19 (95.0)	46 (92.0
Cultural background, n (%)			
Australian	16 (53.3)	19 (95.0)	35 (70.0)
European	2 (6.7)	-	2 (4.0)
African	-	-	-
Asian	-	-	-
Middle eastern	-	-	-
Other	10 (33.3)	-	10 (20.0)
Aboriginal Torres Strait Islander, n (%)	1 (3.3)	0 (0.0)	1 (2.0)
SES, mean (SD)	9.6 (1.3)	6.7 (1.3)	8.4 (1.9)

Table 1: Characteristics of participants at baseline

^a One comparison participant missing all characteristic data; ^b Additional comparison participant didn't provide cultural background information; ^c Two comparison and one intervention participant had all characteristics missing at baseline

Outcomes	Ν	Baseline, Mean (CI)	3-month, Mean (CI)	p ^a	Adjusted difference in	p ^b	d ^d
					change, Mean (95% CD ^b		
Participants (K- Grade 2)	174						
Steps/day							
Comparison	91	4453 (3706, 5200)	4257 (3509, 5004)	0.412	370 (-474, 1214)	0.313	0.29
Intervention	83	4985 (4124, 5845))	5158 (4298, 6019)	.515			
Object control skills							
Comparison	91	21.2 (16.7, 25.8)	21.7 (17.2, 26.2)	0.410	5.8 (4.1, 7.4)	<.001	0.95
Intervention	83	18.9 (13.7, 24.1)	25.1 (19.9, 30.4)	<.001			
Strike/10							
Comparison	91	6.1 (5.2, 6.9)	5.6 (4.8, 6.5)	0.039	1.4 (0.8, 2.0)	< .001	0.70
Intervention	83	5.5 (4.5, 6.4)	6.5 (5.5, 7.4)	<.001			
Dribble/8							
Comparison	91	2.8 (1.2, 4.4)	3.2 (1.6, 4.8)	0.268	1.2 (0.1, 2.3)	0.040	0.64
Intervention	83	1.9 (0.1, 3.7)	3.4 (1.6, 5.3)	0.005			
Catch/6							
Comparison	91	2.9 (2.2, 3.6)	2.6 (2.0, 3.3)	0.183	1.0 (0.3, 1.7)	0.014	0.63
Intervention ^c	82	2.2 (1.4, 3.0)	2.9 (2.1, 3.7)	0.019			
Kick/8							
Comparison	91	3.5 (2.9, 4.1)	3.9 (3.3, 4.5)	0.085	0.4 (-0.4, 1.3)	0.266	0.20
Intervention	83	3.6 (2.9, 4.3)	4.5 (3.8, 5.1)	0.020			
Overarm throw/8							
Comparison	91	2.0 (1.3, 2.6)	2.1 (1.5, 2.8)	0.478			0.33
Intervention	83	1.7 (1.0, 2.5)	2.6 (1.8, 3.3)	<.001	0.7 (0.1, 1.4)	0.031	
Underarm throw/8							
Comparison	91	4.2 (3.4, 5.1)	4.2 (3.3, 5.0)	0.652			0.67
Intervention	83	4.0 (3.0, 5.0)	5.2 (4.3, 6.2)	<.001	1.3 (0.7, 1.9)	< .001	
Participants (Grade 6)	50						

 Table 2: Changes in outcome variables from baseline to post intervention by treatment group

Teacher rating of leadership							
skills							1.09
Comparison	30	2.82 (2.47, 3.16)	3.36 (3.06, 3.66)	<.001			
Intervention	20	2.69 (2.24, 3.13)	3.92 (3.53, 4.32)	<.001	0.70 (0.38, 1.01)	< .001	
Leadership self-efficacy							
Comparison	30	3.83 (3.56, 4.10)	3.85 (3.59, 4.11)	0.848			0.45
Intervention	20	3.99 (3.64, 4.34)	4.25 (3.90, 4.61)	0.057	0.25 (-0.10, 0.59)	0.163	

Note. CI confidence intervals ^aWithin group effect (from baseline to posttest); ^bTreatment-by-time effect [(INT posttest - INT baseline) - (CON posttest – CON baseline)]; ^cOne intervention participant missing data for this skill at both time points; ^dCohen's d was calculated using the following formula: d = [(intervention posttest mean - minus intervention baseline mean)] / pooled standard deviation of change

Components of GLASS program	Peer leadership		
	acceptability*		
	Mean (SD)		
	(n=20)		
I enjoyed participating in the GLASS program	2.65 (0.59)		
The GLASS program helped me to be a better leader	2.45 (0.51)		
I enjoyed the GLASS leadership training	2.74 (0.45)		
I found the student manual useful for the GLASS sessions	2.55 (0.69)		
The students in my group enjoyed the GLASS sessions	2.80 (0.41)		
I enjoyed the length of each GLASS session	2.55 (0.69)		
As a GLASS leader I found the feedback given to me useful	2.50 (0.61)		
I found the lesson cards useful for the GLASS sessions	2.50 (0.51)		
I found the equipment kits included enough equipment	1.95 (0.83)		
I enjoyed being a GLASS leader	2.80 (0.41)		

 Table 3: Peer leaders acceptability of the intervention and intervention components

*score is out of 3