

Evaluation of the
CONNECTIONS High School
Multicultural Environmental
Leadership Program
Final Report

Guyn Cooper Research
Associates Ltd.

Calgary, Alberta

October 31, 2017

Evaluation of the CONNECTIONS High School Multicultural Environmental Leadership Program

Final Report

Completed for SEEDS Connections by Guyn Cooper Research Associates Ltd.

Funding for this evaluation was provided by the Government of Alberta, Alberta Human Rights and Multiculturalism Grant Program



October 31, 2017
Calgary, Alberta

© SEEDS Connections

Suggested citation: Cooper, M. 2009. *Final Report: Evaluation of the Connections High School Multicultural Environmental Leadership Program*. (Calgary, AB: SEEDS -Connections).

Contents

Executive summary.....	i
1. Introduction	1
2. Program overview.....	1
3. Evaluation design and methods.....	3
3.1 Data sources.....	4
3.2 Methods.....	5
3.3 Limitations.....	6
4. Program participants and comparison participants	7
5. Results.....	8
5.1 Racism and discrimination	8
5.1.1 Knowledge and attitudes about racism and discrimination.....	8
5.1.2 Behaviours with respect to racism and discrimination	15
5.2 Environmental stewardship	17
5.2.1 Knowledge and attitudes about environmental stewardship	17
5.2.2 Behaviours with respect to environmental stewardship	20
5.3 Leadership.....	21
5.3.1 Leadership characteristics.....	21
5.3.2 Leadership behaviours	23
5.4 Cross-cultural understanding.....	24
6. Participant feedback and satisfaction.....	27
7. Conclusions	29

Figures

Figure 1. Population group	7
Figure 2. Gender.	7
Figure 3. Prevalence of discrimination in Canada	9
Figure 4. Seriousness of discrimination in Canada.....	100
Figure 5. Prevalence and seriousness of discrimination in Canada, Effect sizes.....	100
Figure 6. Sexist beliefs	11
Figure 7. Sexist beliefs, Effect sizes.....	111
Figure 8. Racist beliefs	122
Figure 9. Racist beliefs, Effect sizes.....	122
Figure 10. Homophobic beliefs	133
Figure 11. Homophobic beliefs, Effect sizes	133
Figure 12. Attitudes toward disability.....	144
Figure 13. Attitudes toward disability, Effect sizes	144
Figure 16. Since returning from the four-day, on-site portion of Connections, told others about what you learned.....	166
Figure 17. Environmental stewardship attitudes.....	188
Figure 18. Environmental stewardship attitudes, Effect sizes	199
Figure 19. Ecological behaviours.....	20
Figure 20. Ecological behaviours, Effect sizes	221
Figure 21. Leadership characteristics influencing adolescent peers.....	22
Figure 22. Leadership characteristics influencing adolescent peers, Effect sizes	22
Figure 23. Frequency of leadership behaviours.....	23
Figure 24. Engagement and support for Indigenous peoples	24
Figure 25. Engagement and support for Indigenous peoples, Effect sizes.....	25
Figure 26. Because I participated in Connections... ..	27

Executive summary

The Connections Program

The CONNECTIONS High School Multicultural Environmental Leadership Program (“the Connections Program”) is a unique experiential education program that seeks to positively influence Alberta high school students’ knowledge, attitudes, and behaviour with respect to racism and discrimination based on race, sex, sexual orientation, and disability; environmental stewardship; and leadership. It is a priority of the Program to include a high number of both Indigenous participants and Indigenous teachings and cultural activities to increase understanding, decrease discrimination, and enhance relationships between Indigenous and non-Indigenous youth.

The program’s curriculum has evolved along with cultural and racial diversity in Alberta and explicitly includes and empowers participants from all diversity groups. It is grounded in research and has been thoughtfully refined and updated over 30 years as new knowledge has emerged. Strategies used in the program include several different theoretical foundations and include multiple, sequenced strategies and active learning activities to simultaneously increase knowledge and awareness and develop the skills and confidence required to put this knowledge into action. Learning strategies connect issues of discrimination and racism, leadership, and environmental stewardship.

Evaluation overview

Previous outcome and process evaluations have indicated that students who completed the Connections Program demonstrated sustained improvements in anti-racist and anti-discrimination attitudes and, most importantly, behaviours. The current study, which used a quasi-experimental design and standardized instruments, was undertaken to determine whether the previous results would stand up to rigorous testing and to quantify the size of impacts by measuring effect size. This study may be unique in its efforts to quantify both attitudinal and behavioural changes on multiple grounds of discrimination as well as environmental stewardship and leadership, and to assess changes after a follow-up period resulting from participation in a program targeting adolescents.

Results

The results show that the Connections Program is a leader in diversity education. High school students who completed the program demonstrated large, sustained improvements in anti-racist and anti-discrimination attitudes and, most importantly, behaviours three months after the core component of the program and compared to a comparison group of students. The success of the Connections Program may be unique among anti-racism and anti-discrimination programs and, on some measures, effect sizes were two to three times larger than those reported in evaluations of other, far less ambitious programs.

The Program was also successful in increasing awareness of and support for Indigenous peoples and issues among non-Indigenous respondents, and these improvements were sustained over time. Due to data limitations it is more difficult to draw firm conclusions about the Program's impact on the Indigenous participants, but the available data suggest that the findings with respect to knowledge, attitudes, and behaviours about racism and discrimination were also true for Indigenous participants, who may also have experienced increased self-confidence and, perhaps, Indigenous pride.

Findings with respect to environmental stewardship were mixed, with participants regressing to the same attitudes and behaviours of the comparison group on some indicators at three months follow up. This is probably due to the oil industry-related economic downturn in the province, which may have directly affected the program participants' families. It is unlikely that any programmatic intervention could have the desired impact on environmental attitudes and behaviours in the context of such profound cultural and economic shifts, and the results might be very different in a year or two, as the economy continues to stabilize and improve. Impact on leadership was negligible, perhaps indicating that the instruments used in the evaluation were not a good fit for the program.

Overall, the findings from this quasi-experimental evaluation are overwhelmingly positive and confirm that the CONNECTIONS High School Multicultural Environmental Leadership Program is a leader in diversity education. Impact on participants' knowledge, attitudes and, most importantly, behaviours, is very high as reflected by effect size. To date, there do not appear to have been any empirical evaluations of anti-discrimination programs for adolescents that approximate this level of effectiveness.

1. Introduction

The CONNECTIONS High School Multicultural Environmental Leadership Program (“the Program”) is a unique experiential education program that seeks to positively influence Alberta high school students’ knowledge, attitudes, and behaviour with respect to racism and discrimination based on race, sex, sexual orientation, and disability; environmental stewardship; and leadership. It is a priority of the Program to include a high number of both Indigenous participants and Indigenous teachings and cultural activities to increase understanding, decrease discrimination, and enhance relationships between Indigenous and non-Indigenous youth.

Since 2001, repeated outcome and process evaluations have shown that students who completed the program demonstrated large, sustained improvements in anti-racist and anti-discrimination attitudes and, most importantly, behaviours, and some sustained improvements in leadership and environmental stewardship attitudes and behaviours.

In 2016, funding was obtained from the Alberta Human Rights and Multiculturalism Grant Program to include greater numbers of Indigenous youth and to enhance the program evaluation by developing and using an instrument to assess the impact of program participation on increasing understanding, reducing discrimination, and enhancing relationships between Indigenous and non-Indigenous youth. The grant also allowed for the completion of a comprehensive quasi-experimental impact evaluation, where participant data were collected using standardized, validated instruments and, where possible, compared with data collected from a comparison group, and effect sizes were calculated to more conclusively quantify the impact of the Program on participants.

This report presents the findings from the impact evaluation, which has been completed by an external research company. Overall, the findings from this quasi-experimental evaluation are overwhelmingly positive and confirm that the Program is a leader in diversity education. Impact on participants’ knowledge, attitudes and, most importantly, behaviours in the areas of racism and discrimination is very high as reflected by effect size. To date, there do not appear to have been any empirical evaluations of anti-discrimination programs for adolescents that approximate this level of effectiveness.

2. Program overview

The Program is an initiative of SEEDS Connections that is provided for high school credits to high school students throughout Alberta. It was established in 1987 as a non-profit society by a group of teachers and administrators with the Calgary Board of Education, some of whom still serve on the board of directors. The curriculum has evolved along with cultural and racial diversity in the province and explicitly includes and empowers participants from all diversity groups. It is grounded in research and has been thoughtfully refined and updated over 30 years as new knowledge has emerged. Strategies used in the program include several different theoretical foundations and include multiple, sequenced strategies and active learning activities to simultaneously increase knowledge and awareness and develop the skills and confidence required to put this knowledge into action. Learning strategies connect issues of discrimination and racism, leadership, and environmental stewardship. Students have opportunities to participate in simulations, cooperative learning and problem-solving activities, “family

group” discussions, reflective journal writing, and facilitated discussion. Indoor lessons are interspersed with outdoor sessions, along with the ever-popular evening campfires and other recreational activities. Each session of the Program accommodates between 50 and 90 high students, typically representing several high schools from across the province. A teacher from each of these schools is required to attend the on-site component of the program and to organize and supervise associated learning activities with the participants at their own schools.

Teachers from the participating schools select the students who will be invited to participate. The students selected must be willing to work independently and be able to manage their time effectively, as the program is quite time-consuming and requires four days away from other school classes. Other criteria for consideration include an interest in learning about cross-cultural issues and diversity, a willingness to share thoughts in a constructive manner, and a desire to make a positive difference in the world. Efforts are made to ensure that participants include members of non-dominant ethno-cultural groups.

The Program has three components: pre-trip online work and related activities; a four-day on-site experience; and post-trip online work and a final project. Students receive academic credits upon successful completion of the Program.

- Pre-trip work

Students work online following a self-directed series of online activities and discussion groups with other students across the province who are also participating in the program. They learn more about race relations concepts and develop a sense of the cultural diversity within their own schools as they explore and discuss related topics focusing on diversity and environmental education and leadership.

- Four-day on-site program

The key component of the Connections program is an intensive four-day, four-night on-site program at Kamp Kiwanis, located in the idyllic foothills of the Rocky Mountains, 25 kilometers outside the city of Calgary. The curriculum consists of multiple, sequenced strategies and highly participatory learning activities, specifically tailored for adolescent participants and led by program facilitators and guest presenters, that connect issues of culture, diversity, leadership, and the environment. Indoor sessions are interspersed with outdoor sessions, along with evening campfires and recreational activities. Learning strategies and activities include simulations and role plays, cooperative learning and problem-solving activities, journal writing, small- and large-group facilitated discussions, and interactive learning sessions about cultures and diversity issues. Students have opportunities to discuss, debate, and reflect upon the issues in a safe and supportive environment. The strategies and activities are thoughtfully planned to simultaneously increase knowledge and awareness and develop the confidence and practical skills required to put this knowledge into action.

- Post-trip online work and activities

Following the four-day onsite program, students complete the program by working online once again with their peers in follow-up activities related to their onsite experience and their own school situation. They also create and complete a “Be the Change” project that is shared with other students.

3. Evaluation design and methods

The evaluation was designed by the researchers in consultation with SEEDS Connections staff and board members and an Aboriginal Advisory Committee comprised of Elders and educators from local Indigenous communities and representatives of institutions that include the Calgary Board of Education, Bow Valley College, the Calgary Police Service, and Alberta Human Rights.¹ The design was ambitious. Many new instruments were incorporated into the questionnaire with a view to experimenting to find, wherever possible, tools that are standardized, in the public domain (free of charge to use), and a good fit for the Program, which has evolved considerably since the questionnaire was last updated almost 10 years earlier. Partly because an important aspect of this evaluation was to assess the impact of program participation on increasing understanding, reducing discrimination, and enhancing relationships between Indigenous and non-Indigenous youth, there was a much greater emphasis on measuring knowledge, attitudes, and behaviours with respect to racism and discrimination than environmental stewardship and leadership.

In addition, the research team developed and piloted the first draft of what was hoped to become, after statistical validation by experts, the Indigenous Adolescent Identity Scale, as no instrument of this nature currently exists. A draft version of the proposed scale was piloted on 22 summer school students in summer 2016, and adjusted accordingly for the full pilot in the current study. For subsequent validation purposes, two tests that do not align with desired outcomes of the Program were included in the questionnaire (Erikson Psychosocial Stage Inventory and the Multigroup Ethnic Identity Measure – Revised). Unfortunately, there were insufficient data from Indigenous students to test the scale in even a preliminary way.

The original research questions were modified somewhat due to several data limitations, most notably the unfortunate absence of Indigenous students in the comparison group who completed the three-month follow-up questionnaire, discussed further below. The modified research questions were as follows:

1. Three months after participation and compared to the comparison group, were there improvements in participants' knowledge and attitudes in the following areas: discrimination or racism based on sex, race, sexual orientation, or disability; environmental stewardship; and leadership characteristics and behaviours? Did outcomes differ for Indigenous students?
2. Three months after participation and compared to the comparison group, were there improvements in participants' behaviours and sharing of information learned through the Program in the following areas: discrimination or racism based on sex, race, sexual orientation, or disability; environmental stewardship; and leadership characteristics and behaviours? Did outcomes differ for Indigenous students?
3. Three months after participation and compared to the comparison group, were there improvements in cross-cultural understanding and relationships and reduced discrimination between Indigenous and non-Indigenous youth?

¹ The study was approved by the University of Calgary Conjoint Faculties Research Ethics Board but, most unfortunately, approval from sufficient school districts was not obtained to be able to complete the work as an approved research study. It may be possible to complete the research again with a view to publication in the current or subsequent school year if SEEDS Connections secures funding to run several program sessions, a small grant can be obtained to hire a Ph.D. student in statistics or epidemiology (the current researchers will do their work on a pro bono basis), sufficient school districts consent to data collection, and sufficient data are gathered.

3.1 Data sources

The Program already administers an on-line questionnaire before the program, at the end of the on-site component, and at the end of the semester, about three months after the on-site component from all students who participate in the program each year. Valiant efforts were made by Program staff over the 2016-17 school year to encourage all students who participated in program session to complete the on-line questionnaires. Program staff also worked with high schools who had a past relationship with the Program to invite students who had never participated to be part of the comparison group and complete the pre-program questionnaire and the end of semester, follow-up questionnaire.

The questionnaire used in this study includes the following instruments. Some of these instruments are not in the public domain; permission to use them at no charge for the purposes of research involving the Program was obtained from the instruments' authors.

- Erikson Psychosocial Stage Inventory²
- Multigroup Ethnic Identity Measure—Revised (MEIM—R)³
- Aboriginal Awareness and Engagement Questionnaire⁴
- Modified Godfrey-Richman ISM Scale (M-GRISMS)⁵
- Modern Sexism Scale⁶
- Modern Homophobia Scale Lesbian/Gay⁷
- Attitudes to Disability Scale (ADS), Intolerant Schema Measure Subscale, items E1-17⁸
- Environmental stewardship measures⁹
- Leadership behaviours¹⁰
- Body Esteem Scale (BSE), Appearance Subscale¹¹
- Diversity Behaviours, Leadership Behaviours¹²
- Ecological Behavior Scale, Vicarious behaviors toward conservation subscale, less Q1, Q9¹³
- Indigenous Adolescent Identity Scale¹⁴
- Participation in Indigenous Events¹⁵
- Feedback questionnaires¹⁶

² Rosenthal, D.A.; Gurney, R.M.; Moore, S.M. 1981. "From trust on intimacy: A new inventory for examining Erikson's stages of psychosocial development." *Journal of Youth and Adolescence*, 10, 525-537. Public domain.

³ Phinney, J. 1992. "The Multigroup Ethnic Identity Measure: A new scale for use with adolescents and young adults from diverse groups." *Journal of Adolescent Research*, 7, 156-176. Further revised to include Aboriginal. Public domain.

⁴ Developed by Connections and piloted in 2015, revised 2016.

⁵ Godfrey, S. Richman, C.L.; Withers, T.N. 2000. "Reliability and validity of a new scale to measure prejudice: The GRISMS." *Current Psychology: Development, Learning, Personality, Social*, 19(1), 3-20. Permission to use obtained.

⁶ Swim, J.K.; et al. 1995. "Sexism and racism: Old-fashioned and modern prejudices." *Journal of Personality and Social Psychology*, 68(2), 199-214. Permission to use obtained.

⁷ Raja, S.; Stokes, J.P. 1998. "Assessing attitudes toward lesbians and gay men: The modern homophobia scale." *International Journal of Sexuality and Gender Studies*, 3(2), 113-134. Permission to use obtained.

⁸ Power, M.J.; Green, A.M.; THE WHOQOL-DIS Group. 2010. "The Attitudes to Disability Scale (ADS): Development and psychometric properties." *Journal of Intellectual Disability Research*, 54(9), 860-874. Permission to use obtained.

⁹ Gatersleben, B., Steg, L.; Vlek, C. 2002. "Measurement and determinants of environmentally significant consumer behavior." *Environment and Behavior*, 34 (3) 335-362; E18-25; Kitamura, R., Mokhtarian, P.L.; Laidet, L. 1997. "A micro-analysis of land use and travel in five neighbourhoods in the San Francisco Bay Area." *Transportation*, 24(2) 125-158.

¹⁰ Ward, P.; Ellis, G.D. 2008. "Characteristics of youth leadership that influence adolescent peers to follow." *Journal of Park and Recreation Administration*, 26(2), 78-94

¹¹ Mendelson, B.K.; Mendelson, M.J.; White, D.R. 2001. "Body-Esteem Scale for Adolescents and Adults." *Journal of Personality Assessment*, 76(1), 90-106.

¹² Developed by Guyn Cooper Research, 2001, modified, 2016.

¹³ Kaiser, F.G.; Oerke, B.; Bogner, F.X. 2007. "Behavior-based attitude: Development of an instrument for adolescents." *Journal of Environmental Psychology*, 27(3), 242-251.

¹⁴ Developed by Merrill Cooper, Corinne Craig, and George Taven and members of the Connections Aboriginal Advisory Committee: Cindy Provost, Marion Lerat, Patrick Loyer, Walter MacDonald. Derived from Goodwill, A.O.; McCormick, R. 2012. "Giiibinimidizomin: Owning ourselves-Critical incidents in the attainment of Aboriginal identity." *Canadian Journal of Counselling and Psychotherapy (Online)*, 46(1), 21-32. The authors draw on Brendtro, L.; Brokenleg, M.; Van Bockern, S. 2002 (Rev.Ed.) *Reclaiming Youth At Risk: Our Hope for the Future*. (Bloomington, IN: Solution Tree Press). Participation questions are derived from the Aboriginal Identity Questions written by Drs. Ralph Bodor and Leona Makokis in consultation with Calgary FCSS, http://www.aascf.com/pdf/Aboriginal_Identity_Questions_Outcome__1_-_Indigenous_Identity.pdf

¹⁵ Developed by SEEDS Connections.

¹⁶ Developed by Guyn Cooper Research, 2001., revised, 2016.

3.2 Methods

Data from the pre-tests (before the program) were compared with data from the post-test and, more importantly, the follow-up test (three months after the program) to determine if and where statistically significant changes had occurred, and effect size,¹⁷ a more sophisticated measure to quantify the difference is between two measures: the larger the effect size, the bigger the impact of the intervention.

In this study, both statistically significant differences and effect size especially matter because the comparison group is smaller than the program group. Both are helpful in telling the story about the ways in which the Program is effective.

The effect size groupings used in the current analysis are:

None/negligible	.01 to .10
Small	.10 to .30
Moderate	.31 to .65
Large	> .65

The importance of effect size varies with the context, cost, and potential value of a program and should be interpreted in relation to other interventions that seek similar outcomes. A few empirical evaluations of multicultural, diversity, and antiracism programs for adults have been completed in the past decade, and some have found low or low-moderate effect sizes, usually about .30, on prejudice. Empirical evaluations dating back to the 1960s of about 30 structured interventions for pre-school and elementary school-aged children, each intended to stop or prevent prejudice on one or more grounds, most often disability, have reported similar effect sizes. These programs have been considered highly successful and some have been replicated, even though most of the studies have not followed participants to see if the changes are sustained over time. There may be only one empirical study of a program targeting adolescents, which was completed in 1980. This program sought to prevent age discrimination and boasted an effect size of .45 at four to six months follow up. All of these empirical studies looked at attitudes only; there appear to have been no attempts to measure behavioural change.¹⁸

The current study may be unique in its efforts to quantify both attitudinal and behavioural changes on multiple grounds of discrimination as well as environmental stewardship and leadership, and to assess change after a follow-up period, that result from participation in a program targeting adolescents.

¹⁷ This study uses Cohen's D, which is normally used in this type of social science research.

¹⁸ For a summary of this research, see Beelman, A.; Heinemann, K.S. 2014. "Preventing prejudice and improving intergroup attitudes: A meta-analysis of child and adolescent training programs." *Journal of Applied Developmental Psychology*, 35, 10-24.

3.3 Limitations

As with all studies of this nature, there are limitations to the findings.

- The unique respondent identifier variable was left out in one round of the questionnaires, making it difficult to match the pre-tests, post-tests, and follow-up tests for some respondents, which reduced the size of the dataset somewhat.
- All student participants were supposed to complete questionnaires before the program, after the on-site component of the program, and three months after the program, but many did not. Likewise, many students in the comparison group did not complete the follow-up questionnaire, so the size of the comparison group, at 28 individuals, is slightly smaller than the minimum number of 30 that is normally recommended for purposes of statistical analysis. In addition, the findings may reflect an element of self-selection bias.
- There is no comparison group of Indigenous students, as none completed the follow-up test. Analysis has been done using the pre-test and follow-up test data from the 20 Indigenous participants who had matching pre- and follow-up tests but, again, the small group size means that the results should be interpreted with caution.
- There are population group differences between the program and comparison groups, with a higher proportion of Caucasian students in the program group and higher proportion of students from racialized group in the comparison group. In both groups, over 60% of respondents were female.

4. Program participants and comparison participants

Pre-tests were completed by 202 participants and 133 comparison youth; of these individuals, 91 participants and 28 comparison youth also completed a follow-up test about three months after completing the pre-test. Comparison youth did not complete the post-test at the end of the four-day on-site camp; 129 participants completed both a pre- and a post-test

The demographic profiles of the youth who completed both the pre-test and the follow-up test, the data from which have been analyzed in this study are presented in Figures 1 and 2. It should be noted that these demographic breakdowns may be quite different from the profiles of the entire group of students who attended the Program.

Figure 1. Population group, T1 and T3 respondents (Program Group N=91; Comparison Group N=28).

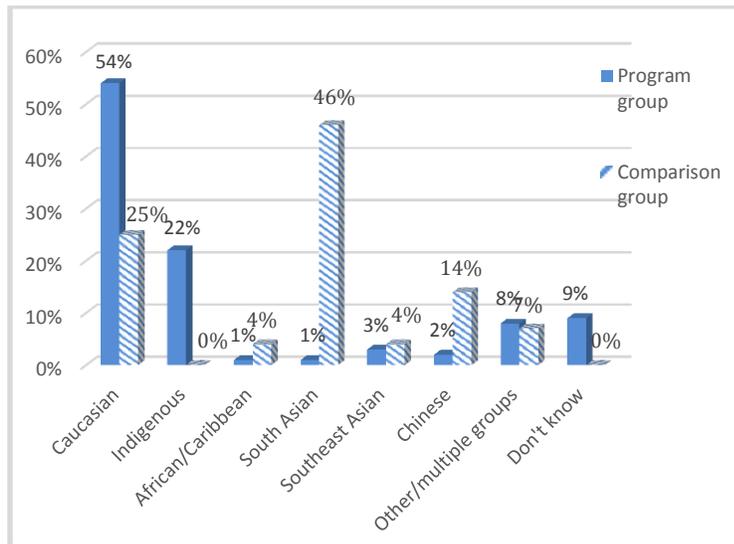
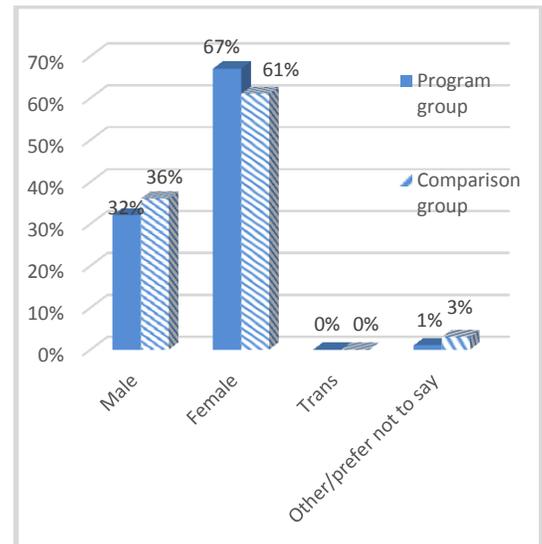


Figure 2. Gender, T1 and T3 respondents (Program Group N=91; Comparison Group N=28).



5. Results

This section of the report compares data from the pre-test (Test 1) and the follow-up test (Test 3) for the program group as a whole, the sub-group of Indigenous participants, and the comparison group. The findings are grouped by the three outcome categories: discrimination, environmental stewardship, and leadership, with cross-cultural understanding discussed separately. The data are presented in two types of graphs:

- Frequencies graphs, which show the percent of responses to each item in the various instruments for Tests 1 and 3 for each of the respondent groups. Significance scores, where significant change has occurred, is provided in parentheses after each item; and
- Effect sizes, calculated using Cohen's D, for all items on which there was significant change.

It should be noted from the outset that the group of Indigenous respondents was small, meaning that large changes are sometimes not captured by significance tests.

5.1 Racism and discrimination

5.1.1 Knowledge and attitudes about racism and discrimination

Overall, program participants' knowledge and attitudes about racism and discrimination improved over the course of the four-day camp (results not presented graphically) but they improved more dramatically from Test 1 to Test 3, and there were no changes for the comparison group. Indigenous participants knowledge and attitudes improved on fewer items but, for the most part, the size of the effect was larger for these participants.

First, perceptions about racism and discrimination in Canada were measured using the M-GRIMS. Respondents were asked how common and how serious racism, sexism, homophobia, discrimination against religious groups, and discrimination against people with disabilities.

Figures 3 and 4 show the percentages of respondents in the program and comparison groups who said that each issue was "quite" or "very" common and "quite" or "very" serious before the program and three months later. Figure 3 shows that respondents in the program group were significantly more likely to think that homophobia and discrimination against members of religious minority groups and people with disabilities are common three months after the program than before the program, but there was no change with respect to racism and sexism. Although it is not shown in a graph, the results were the same for Caucasian and visible minority/Indigenous respondents.

Curiously, there were also significant increases among respondents in the comparison group with respect to the prevalence of homophobia and discrimination against religious minorities, suggesting that they may have been exposed to alternative programming over the three-month period between tests but, as shown in Figure 4, perceptions about the gravity of these forms of discrimination were unchanged or declined for the comparison group and increased for the program group, although only the increased percentage of respondents saying that racism is quite or very serious was statistically significant.

No significant changes on perceptions about the seriousness of discriminatory attitudes, although this may be due to the small sample size.

Figure 5 shows moderate to large effect sizes for all of the items on which there was statistically significant change. The greatest change was for the Indigenous respondents, who were far more likely to believe that discrimination against religious groups is very common at three months follow up.

Figure 3. Prevalence of discrimination in Canada, % quite/very common, Time 1 and Time 3 (Program Group N=91; Program Group, Indigenous N=20; Comparison Group N=28)

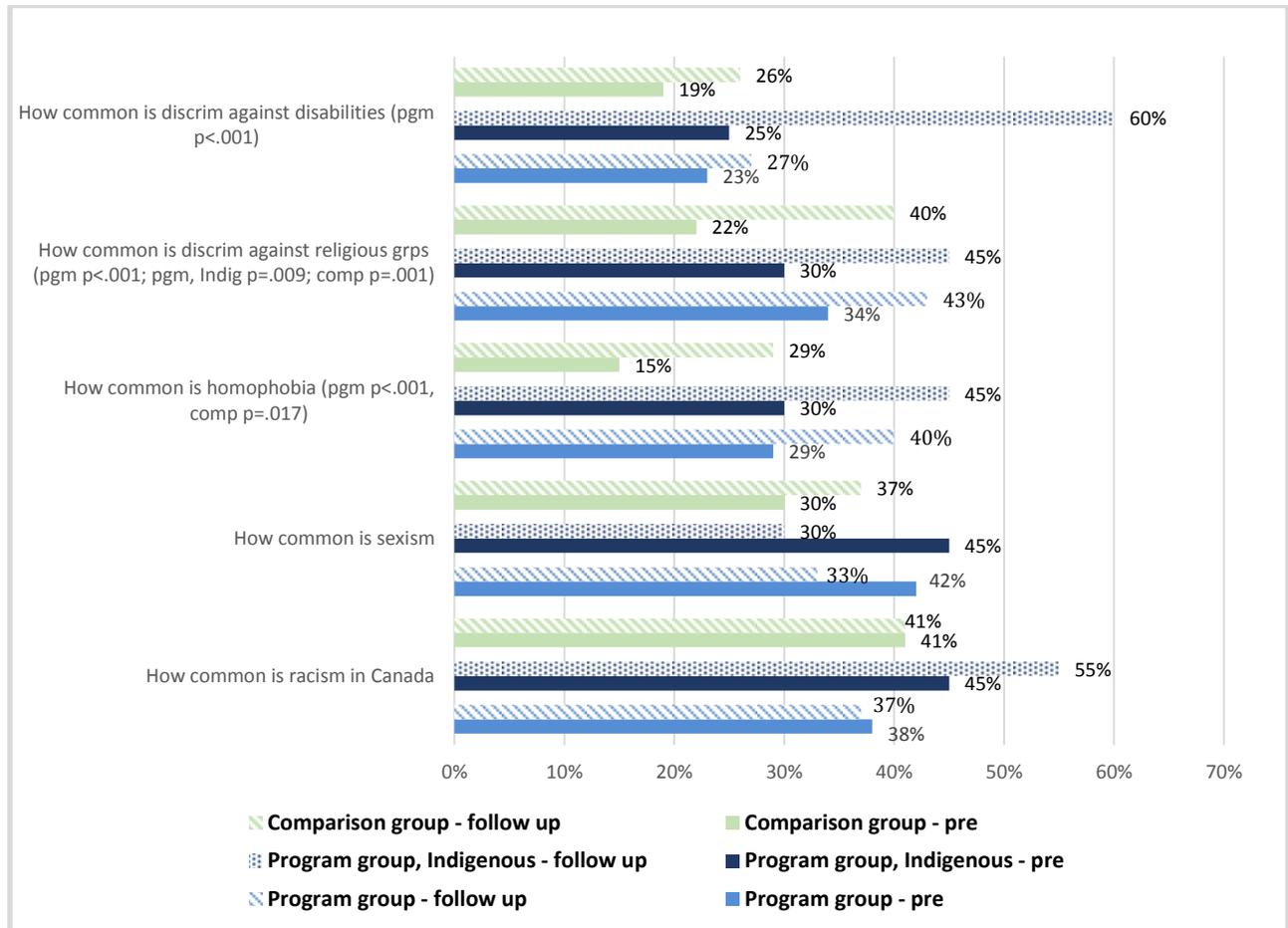


Figure 4. Seriousness of discrimination in Canada, % quite/very serious, Time 1 and Time 3 (Program Group N=91; Program Group, Indigenous N=20; Comparison Group N=28)

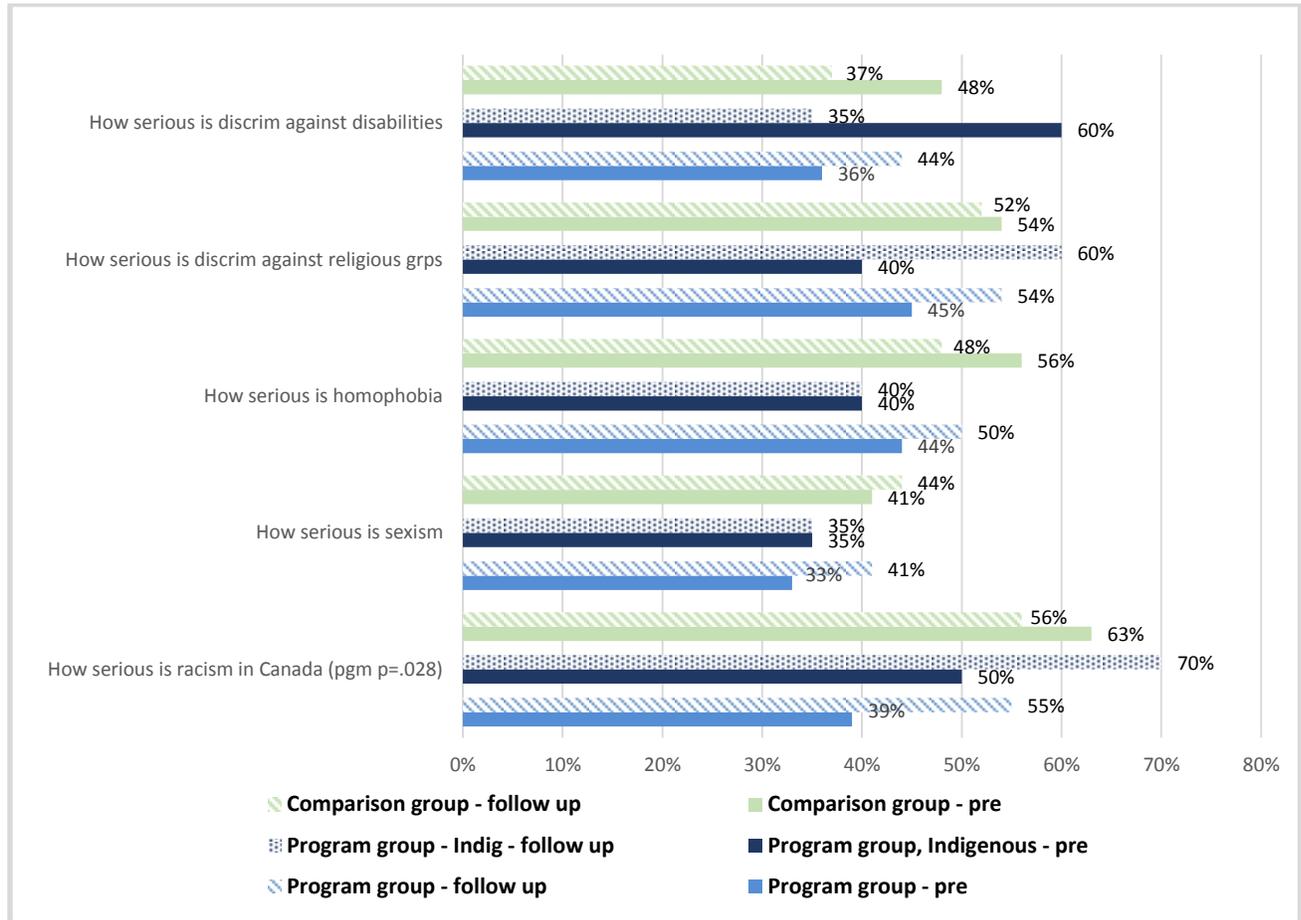
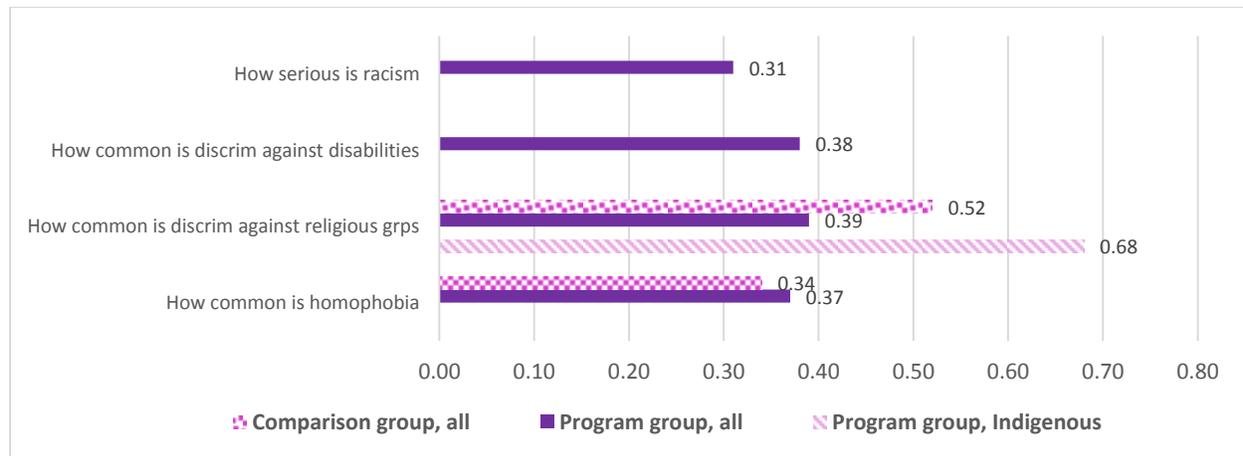


Figure 5. Prevalence and seriousness of discrimination in Canada, Effect sizes



Second, respondents' own levels of sexism, racism, sexism, homophobia, discrimination against religious groups, and discrimination against people with disabilities were measured. The Modern Sexism Scale was used to measure the impact of the program on sexist beliefs. Sexist beliefs improved significantly on four of the five items (Figure 6) and effect sizes were moderate and large, even very large, for the program group as a whole (Figure 7), with no change for the comparison group. For Indigenous students, there was significant improvement on only one item.

Figure 6. Sexist beliefs, % agree/strongly agree, Time 1 and Time 3 (Program Group N=90; Program Group, Indigenous N=20; Comparison Group N=28)

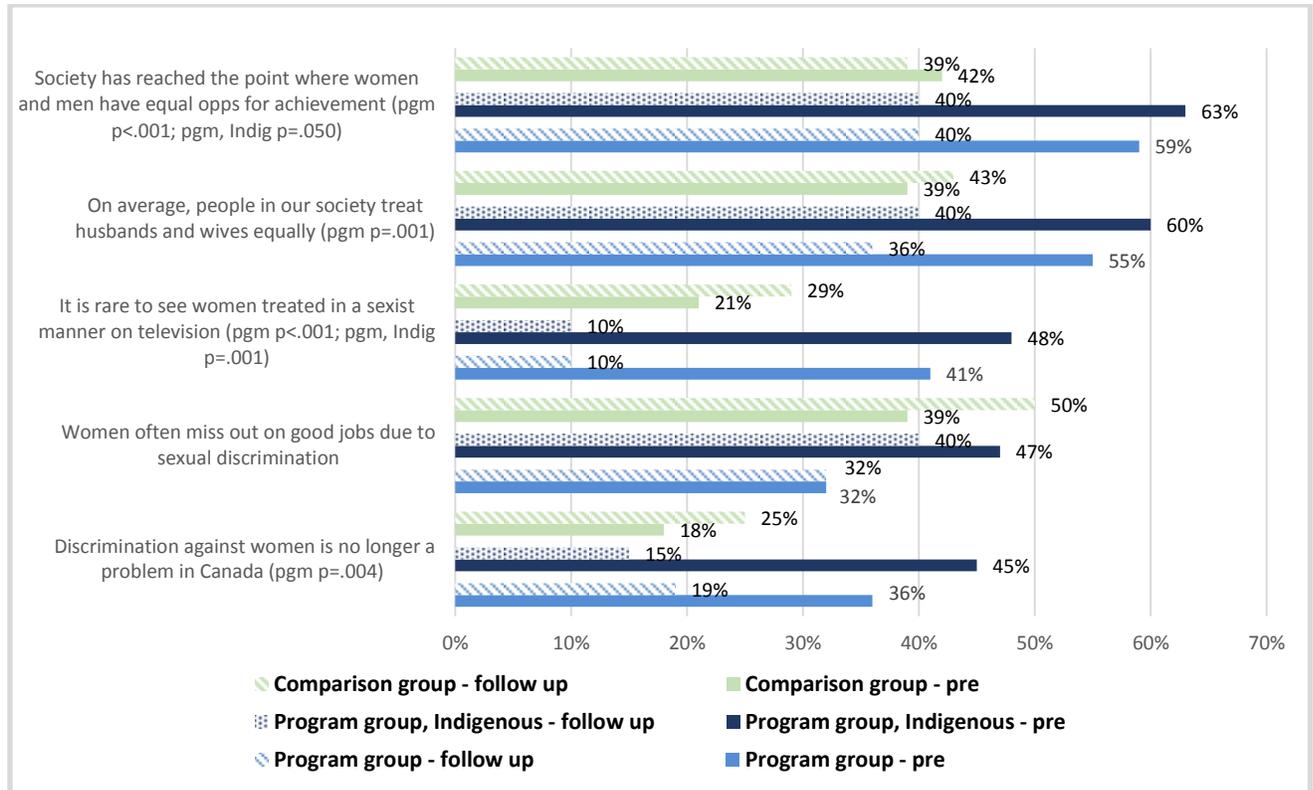
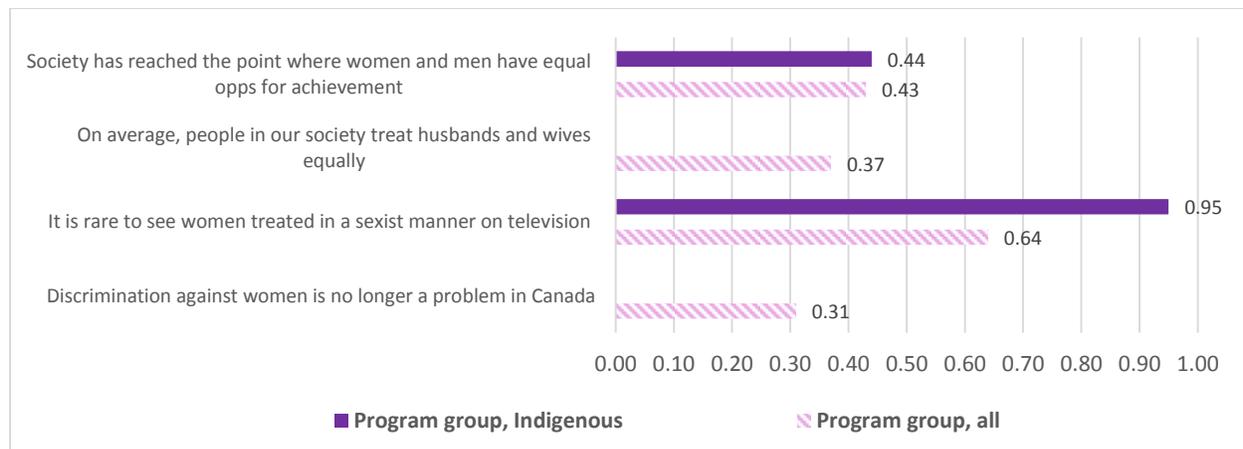


Figure 7. Sexist beliefs, Effect sizes



The GRISMS was used to measure the impact of the program on racist beliefs. Racist beliefs improved significantly on five of the six items (Figure 8) and effect sizes were small, moderate, and large for the program group as a whole (Figure 9), with no change for the comparison group. For Indigenous students, there was a large change on two items.

Figure 8. Racist beliefs, % agree/strongly agree, Time 1 and Time 3 (Program Group N=90; Program Group, Indigenous N=20; Comparison Group N=28)

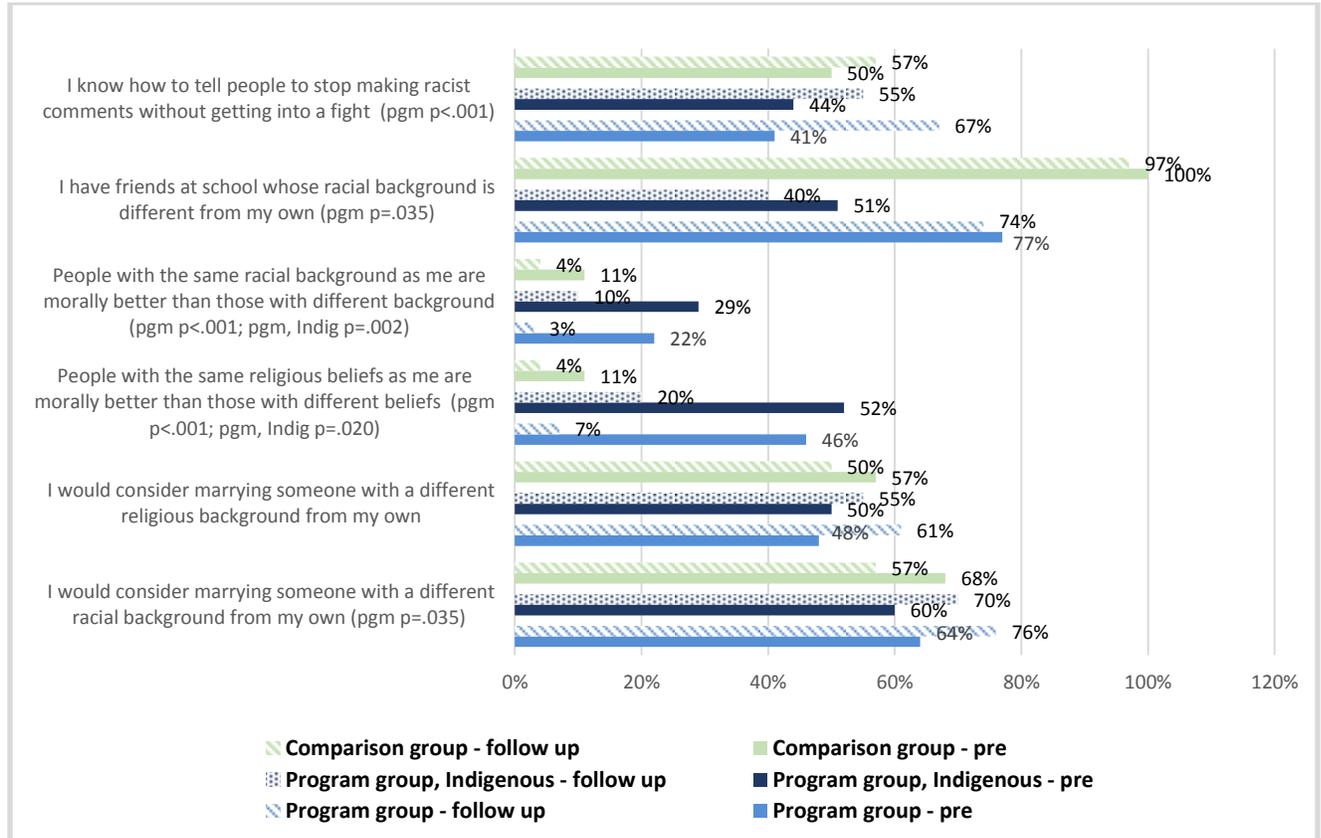
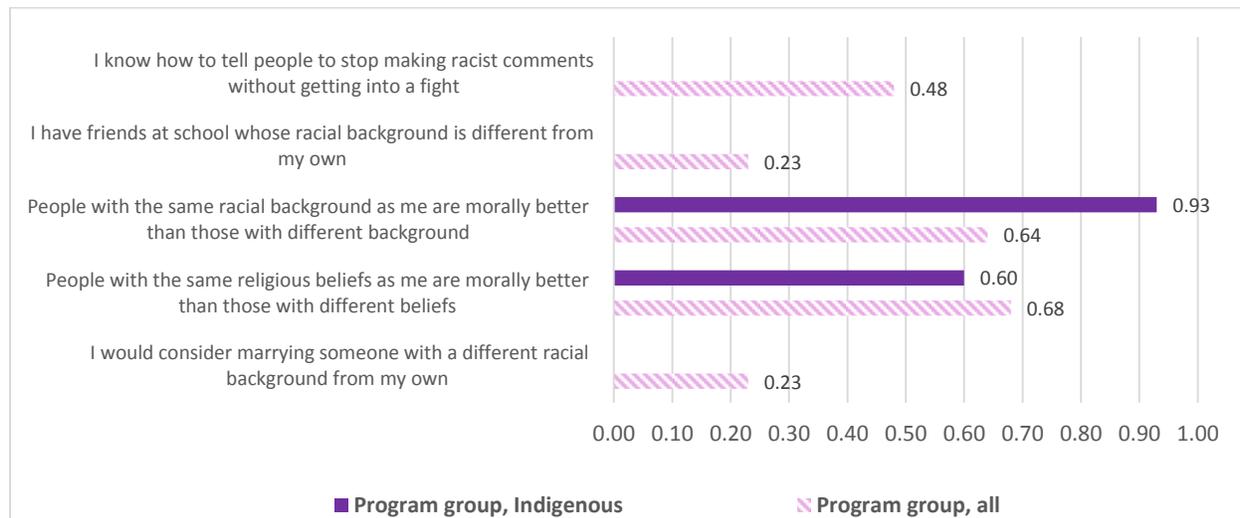


Figure 9. Racist beliefs, Effect sizes



Beliefs about sexual orientation were measured using the Modern Homophobia Scale – Lesbian/Gay. Homophobic beliefs improved significantly on all of the six items (Figure 10) and effect sizes were moderate and large for the program group as a whole (Figure 11), with no change for the comparison group. For Indigenous students, there was a large change on two items.

Figure 10. Homophobic beliefs, % agree/strongly agree, Time 1 and Time 3 (Program Group N=90; Program Group, Indigenous N=20; Comparison Group N=28)

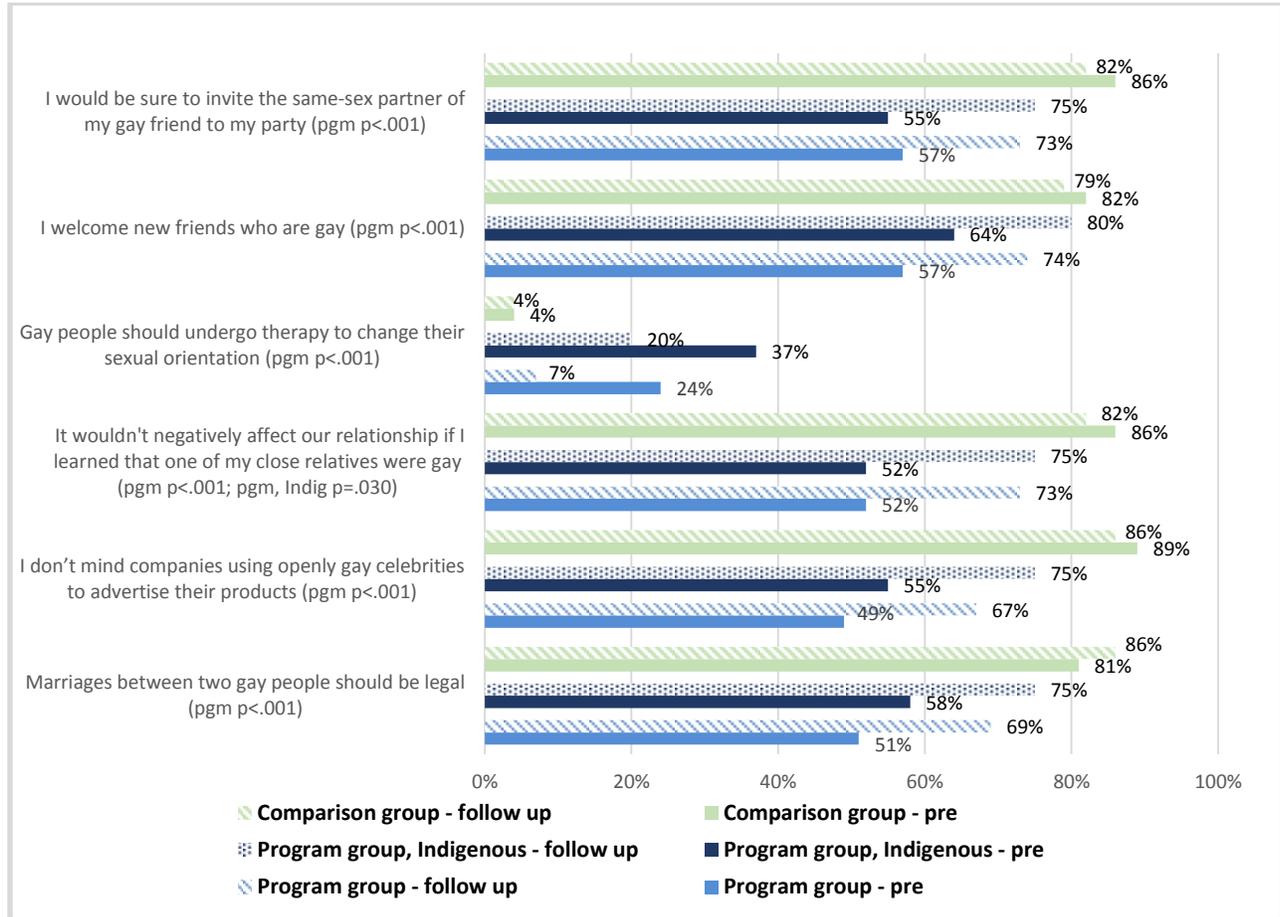
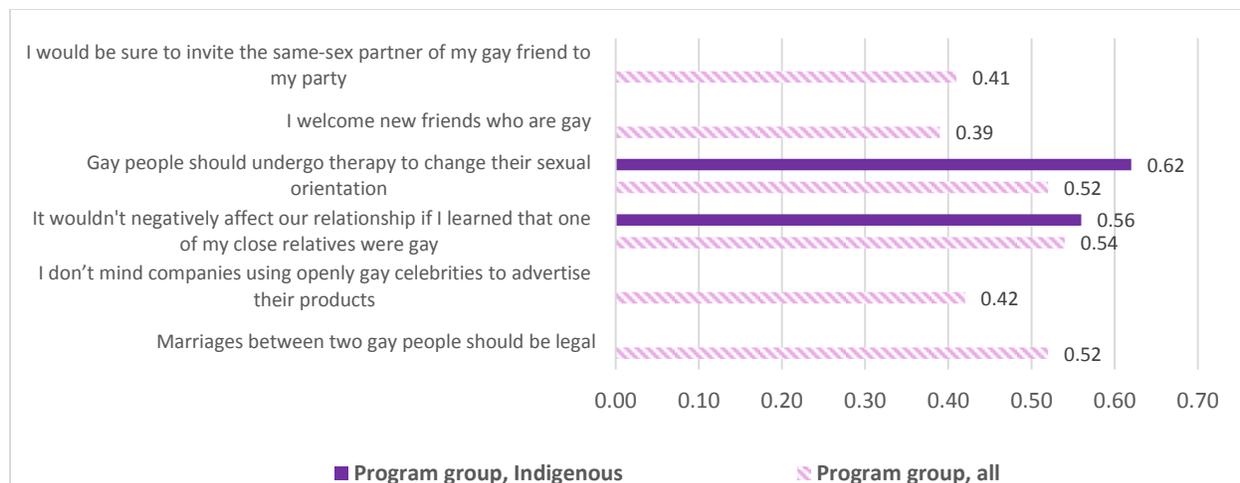


Figure 11. Homophobic beliefs, Effect sizes



Beliefs about people with disabilities were measured using the Attitudes to Disability Scale, Intolerant Schema Measure Subscale. Discriminatory beliefs improved significantly on all of the five items (Figure 12) and effect sizes were moderate and large for the program group as a whole, and for three of the five items for Indigenous students (Figure 13), with no change for the comparison group.

Figure 12. Attitudes toward disability, % agree/strongly agree, Time 1 and Time 3 (Program Group N=90; Program Group, Indigenous N=20; Program Group, Indigenous N=20; Comparison Group N=28)

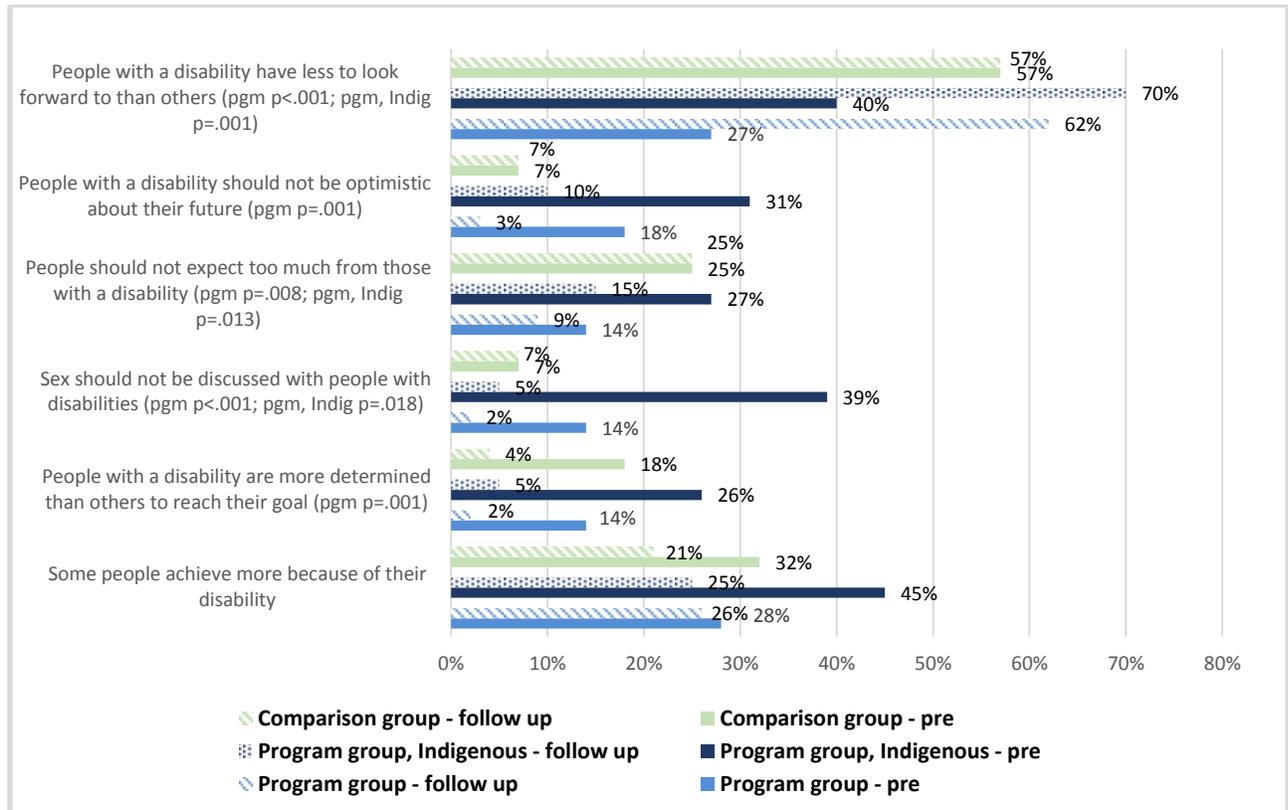
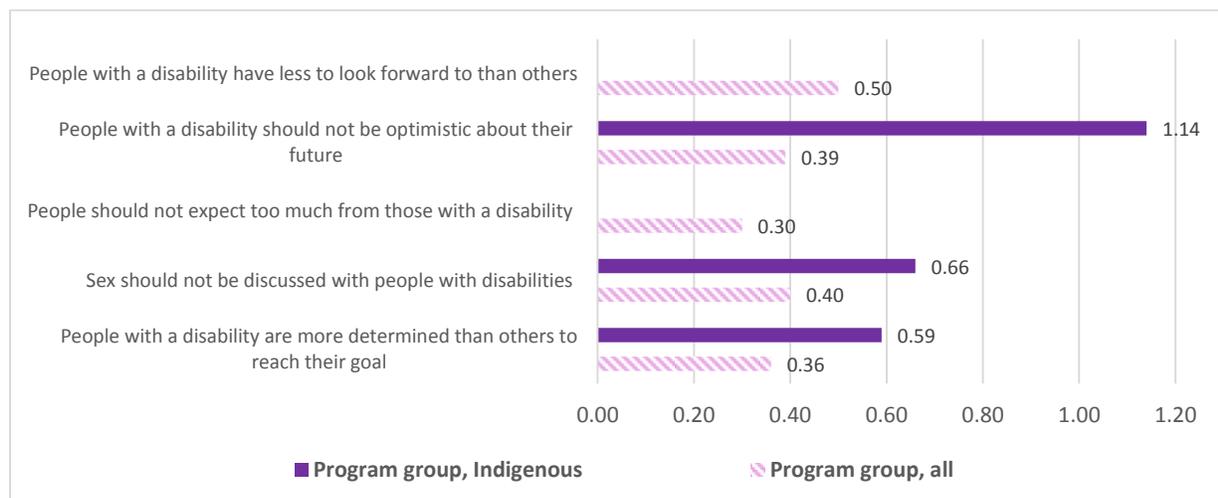


Figure 13. Attitudes toward disability, Effect sizes



5.1.2 Behaviours with respect to racism and discrimination

No standardized instruments measuring behaviours with respect to racism and discrimination that are suitable for this program were found, so the study relied on the items that have been used by the Program for the past decade.

Overall, program participants' behaviours with respect to racism and discrimination improved from Test 1 to Test 3, with participants reporting fewer discriminatory and racist behaviours, and more frequent anti-discriminatory behaviours, including explaining to people why they shouldn't stereotype people based on their gender or minority group and asking someone to stop making a derogatory comment based on gender or membership in a minority group. Among the program group as a whole, there were significant improvements on nine of the 10 items for the program group as a whole and seven items for the Indigenous program group (Figure 14), with a few small effect sizes but mostly moderate to very large effect sizes (Figure 15).

There were, however, significant improvements and, in most cases, very large effect sizes on five of the ten items for the comparison group as well, bolstering the earlier suggestion that some of these students may have been exposed to alternative programming. Another possibility is that this outcome was influenced by participation of other students in the same schools as the respondents who previously participated in the Program, resulting in changes in school climate.

Figure 14. Frequency of discriminatory/anti-discriminatory behaviours, has done at least once in the past month, Time 1 and Time 3 (Program Group N=91; Indigenous Program Group N=20; Comparison Group N=28)

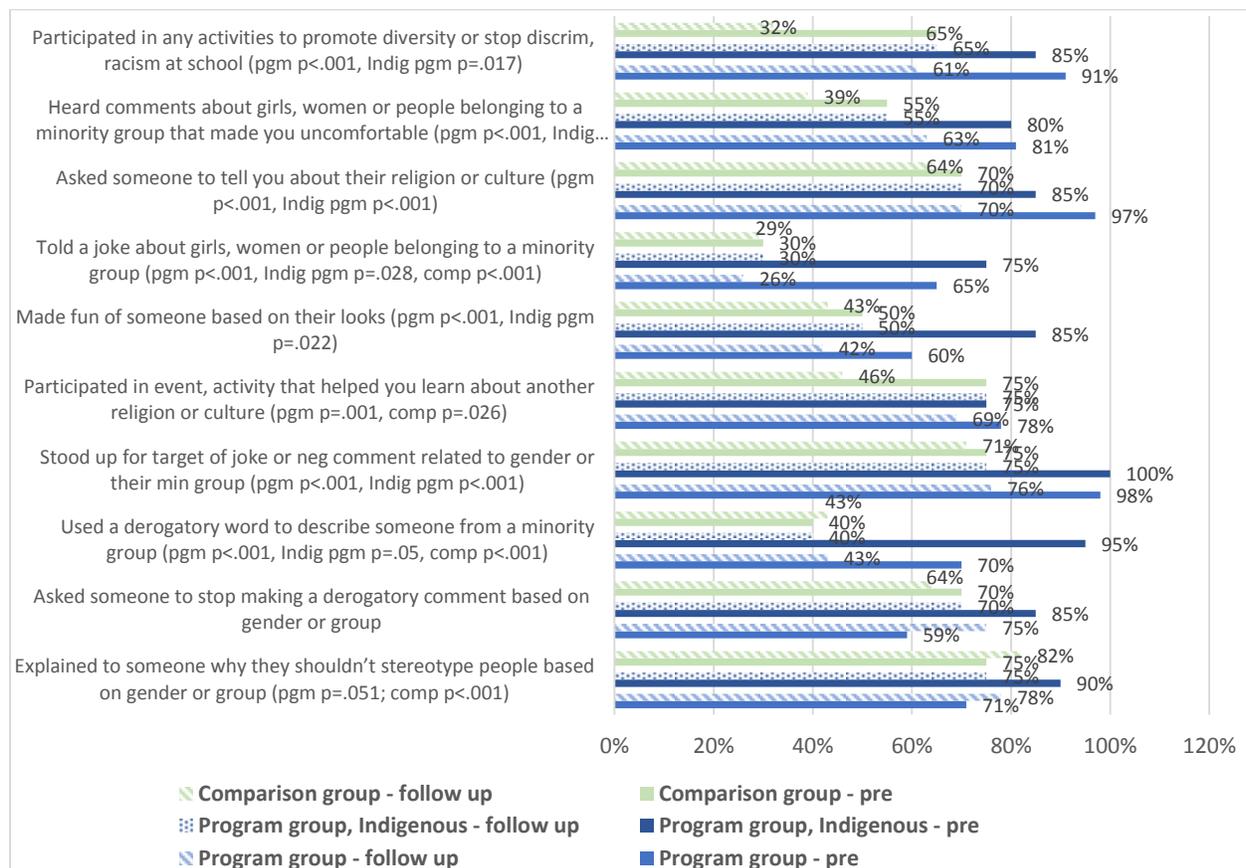
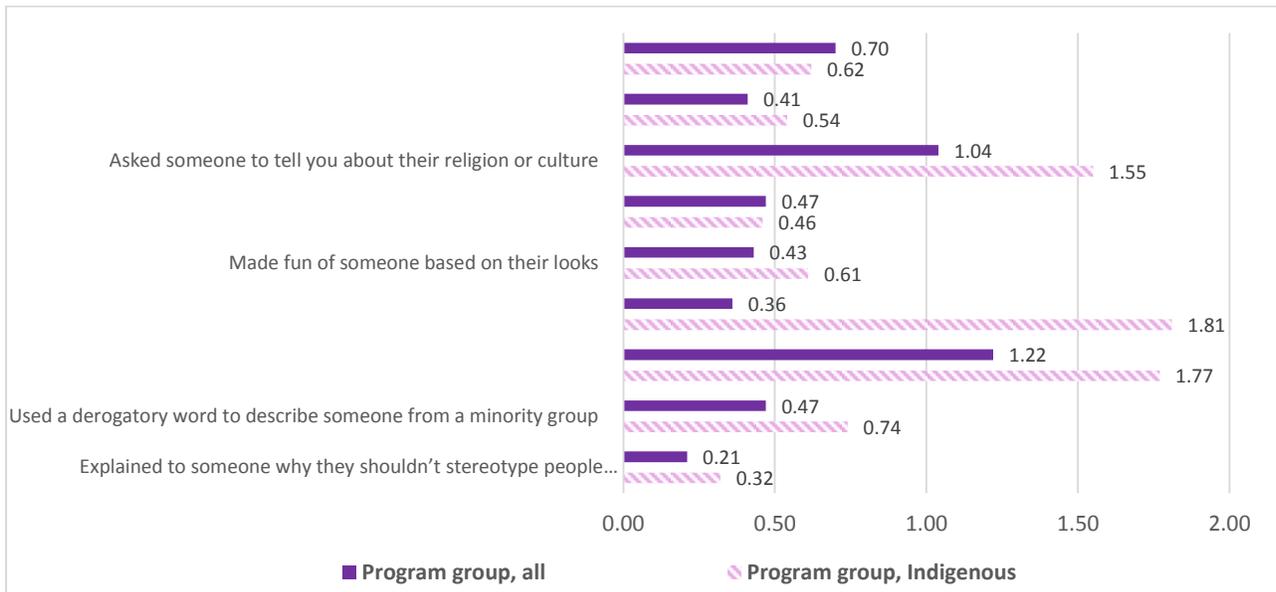
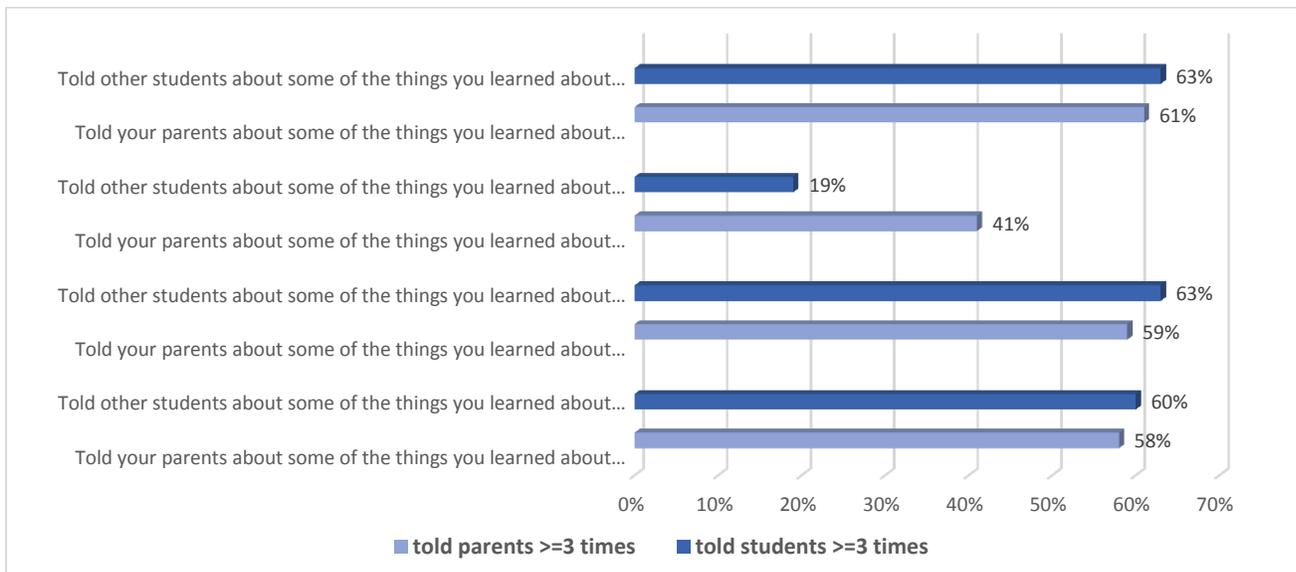


Figure 15. Frequency of discriminatory/anti-discriminatory behaviours, Effect sizes



The follow-up questionnaire includes a set of questions asking participants to report on the extent to which they have shared their learnings about racism and discrimination with other students and with their parents. Figure 16 shows that more than half of respondents had told other students and their parents about what they had learned about racism, sexism, discrimination against religious groups, and discrimination against people with disabilities at least three times since the on-site portion of the Program (about three months). Just over 40% had talked to their parents about what they had learned about homophobia, but only 19% had discussed homophobia with other students. This is not atypical of high school students, who are often uncomfortable discussing sexual orientation.

Figure 16. Since returning from the four-day, on-site portion of Connections, told other about what you learned three or more times (Program participants N=100)



5.2 Environmental stewardship

5.2.1 Knowledge and attitudes about environmental stewardship

Attitudes about environmental stewardship were measured using items from two unnamed scales used to measure environmentally significant consumer behavior and land use and travel.

Attitudes about respecting and preventing environmental damage changed over the course of the four-day camp and then again, often in different directions, by the time of the follow-up test three months later. At the end of the camp, program participants' responses significantly improved on 11 of the 25 variables and worsened on four (not presented graphically). By the follow-up test, things had changed: Respondents in the program group were worrying less about the environment, and many more felt that environmental issues and problems are exaggerated. At follow up, scores improved on nine variables and worsened on eight for the program group as a whole, and improved on four variables and worsened on five for the Indigenous program group, and the negative changes were especially profound (Figures 17 and 18). As shown in Figure 17, the effect size, in the wrong direction, was 2.4 for the Indigenous program group and 1.65 for the program group as a whole for the item "saving threatened species is an unnecessary luxury."

There were no statistically significant changes on any of the variables for the comparison group although, as can be seen in Figure 17, the follow-up scores for the program group are very close to the pre-test and follow-up test scores for the comparison group.

Previous evaluations of the program have consistently reported strong and sustained improvements in attitudes about the environment. Although a standardized instrument was not used in previous evaluations, it is suggested that the different outcome this time may simply be a product of the oil industry-related economic downturn in the province, which may have directly affected the program participants' families, in conjunction with climate change denial by American government leaders, both of which occurred over the past couple of years. It is unlikely that any programmatic intervention could have the desired impact on environmental attitudes in the context of such profound cultural and economic shifts.

Figure 17. Environmental stewardship attitudes, % agree/strongly agree, Time 1 and Time 3 (Program Group N=91; Program Group, Indigenous N=20; Comparison group N=28)

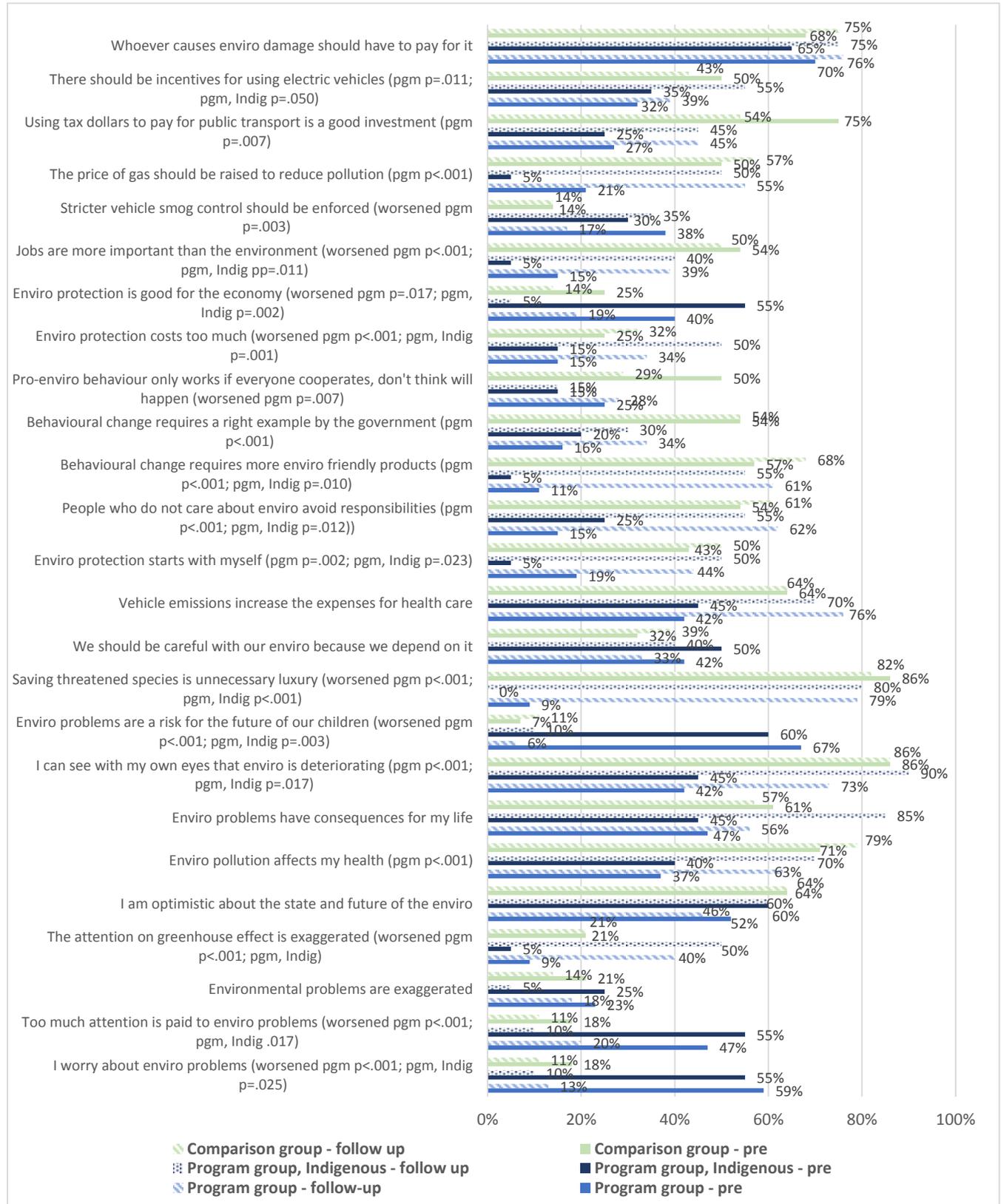
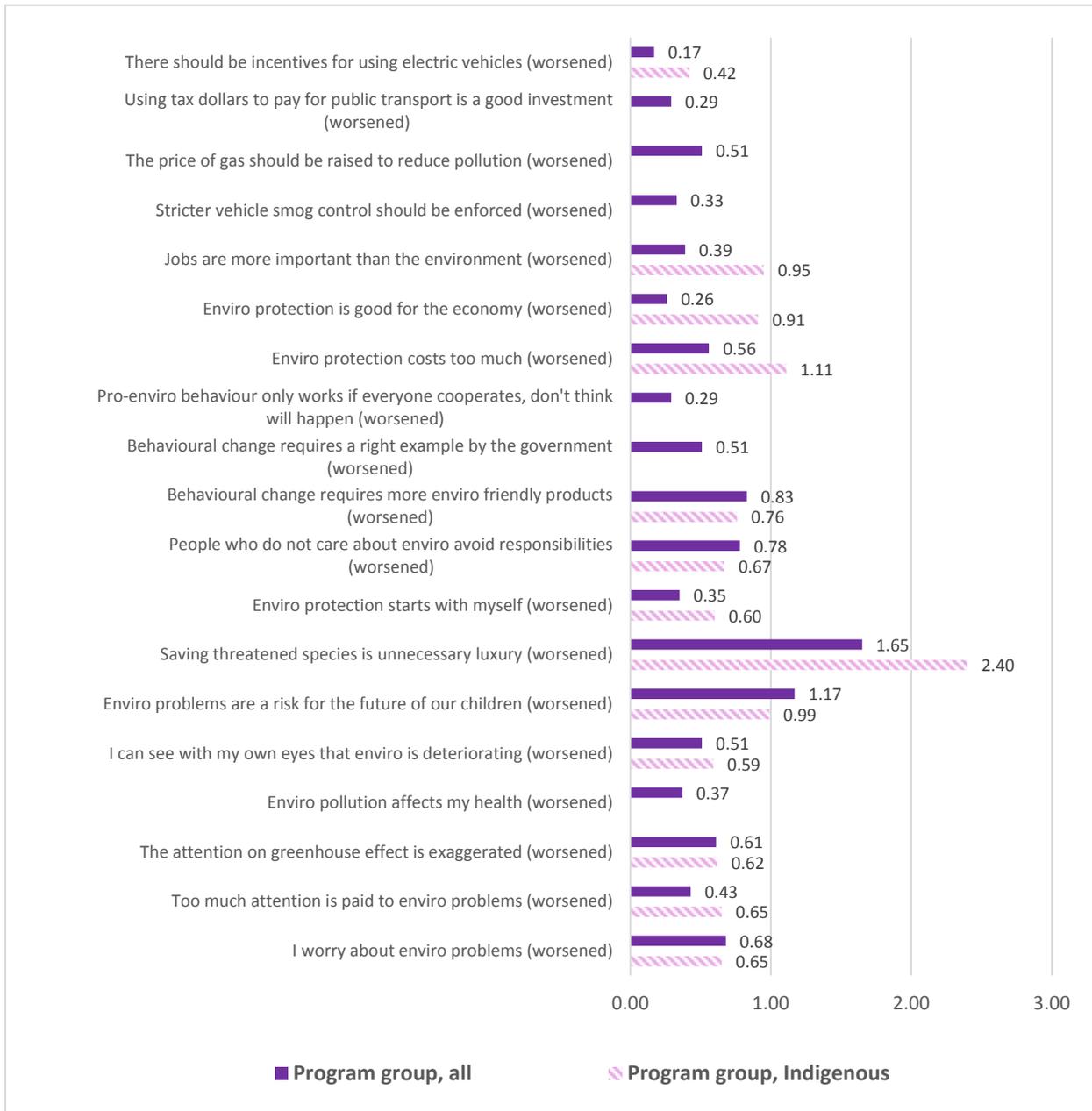


Figure 18. Environmental stewardship attitudes, Effect sizes



5.2.2 Behaviours with respect to environmental stewardship

Environmental behaviours were measured using the Ecological Behaviours Scale, Vicarious Behaviours Toward Conservation Subscale. The findings here were mixed. As shown in Figures 19 and 20, the program group overall and the Indigenous program group were more likely to insist on vacations close to home (although this, too, may have been a consequence of the economic downturn), and less likely to ask their parents to buy seasonal produce. For all three groups and, particularly, the Indigenous group, there was a very large increase on the item, “I learn about environmental issues in the media,” which might be positive or negative, depending on the source of information. A corresponding decline in reading books and other materials about environmental problems for all three groups, although statistically significant, suggests that respondents may have been obtaining information from sources that were biased against environmental stewardship.

Figure 19. Ecological behaviours, % mostly correct and totally correct, Time 1 and Time 3 (Program Group N=91; Program Group, Indigenous N=20; Comparison Group N=28)

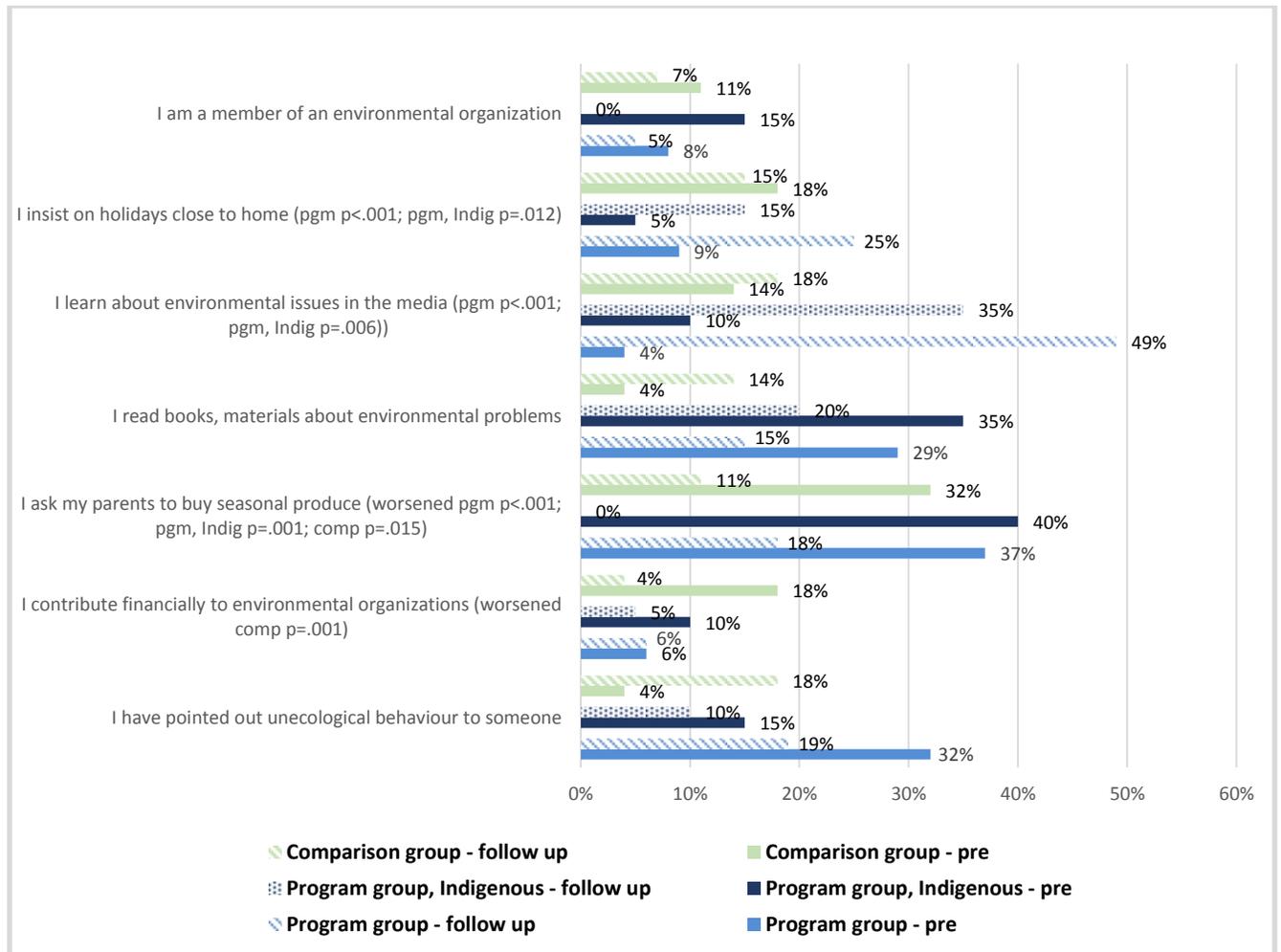
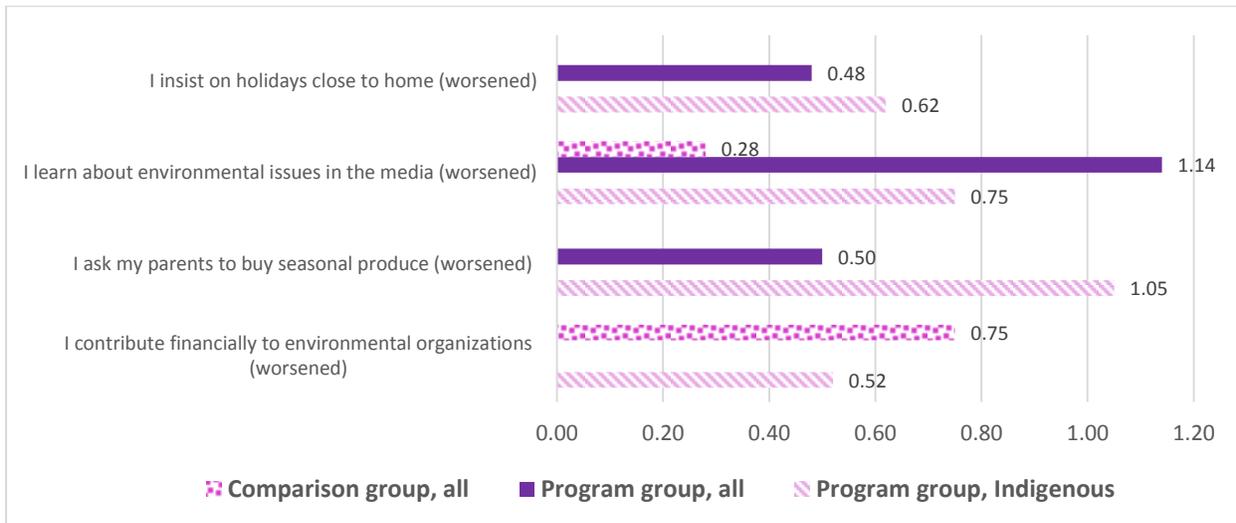


Figure 20. Ecological behaviours, Effect sizes



5.3 Leadership

Overall, there was little change for program participants with respect to leadership characteristics and behaviours, although program participants and, especially Indigenous participants, were far more likely at three months follow up to say that they did not avoid making friends with people who have different beliefs from themselves.

5.3.1 Leadership characteristics

Earlier experimentation with respect to beliefs about leadership qualities produced mixed results so this study shifted to measuring leadership characteristics, using an unnamed scale used to measure characteristics of youth leadership that influence adolescent peers to follow.

For the program group as a whole and the Indigenous program group, there was improvement on one of six items, “I try not to make friends with people who have different beliefs than mine,” with a very large effect size for the Indigenous respondents. However, there was also a large decline for the Indigenous group on the item, “I often tell my friends what I think and how I feel.” (Figures 21 and 22)

There were no significant changes on any items for the comparison group.

Figure 21. Leadership characteristics influencing adolescent peers, % agree/strongly agree, Time 1 and Time 3 (Program Group N=91; Program Group, Indigenous N=20; Comparison Group N=28)

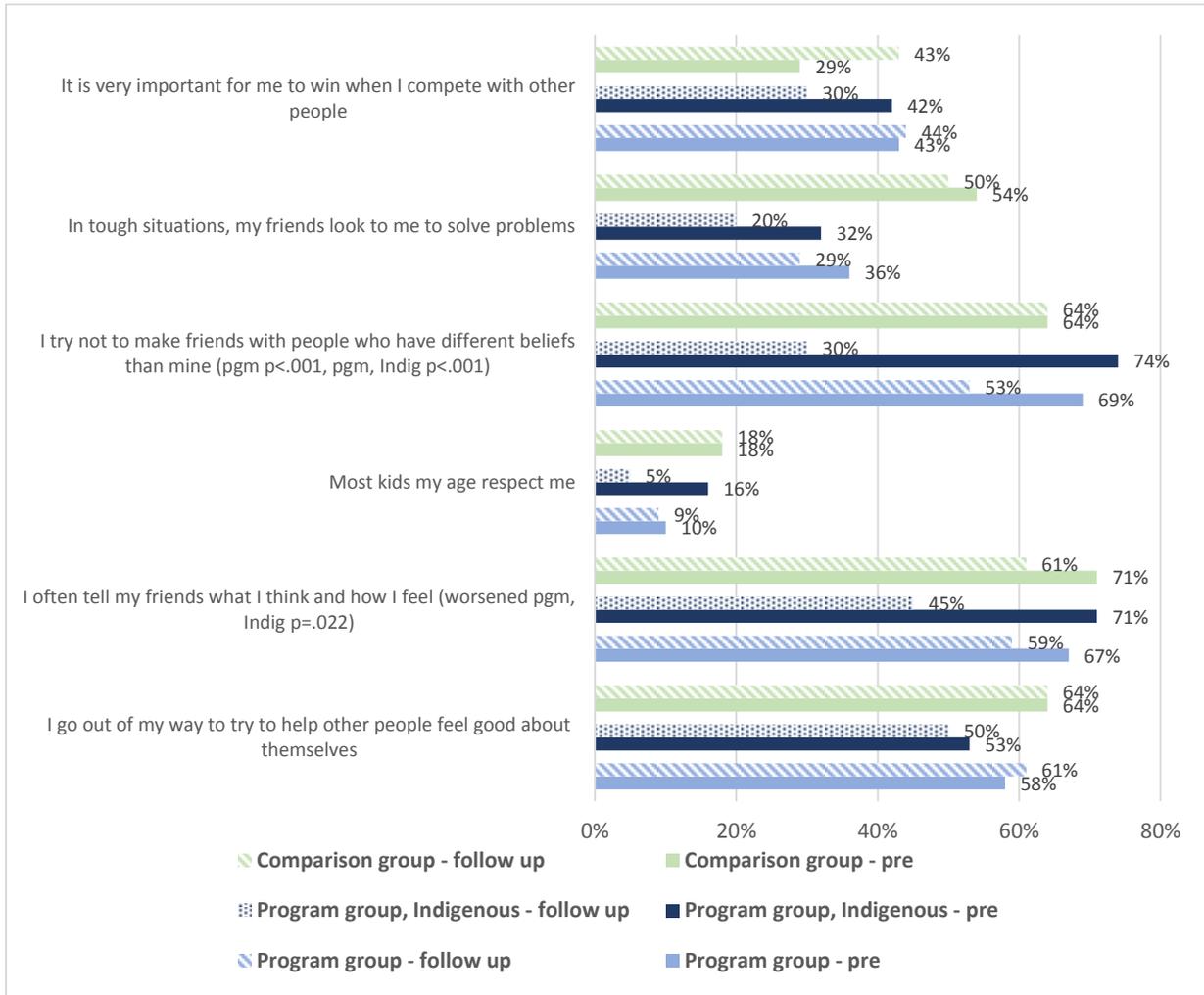
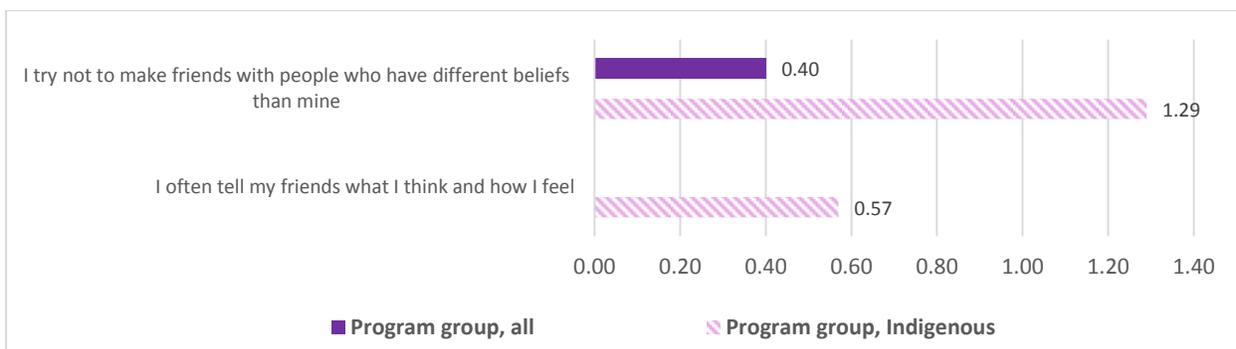


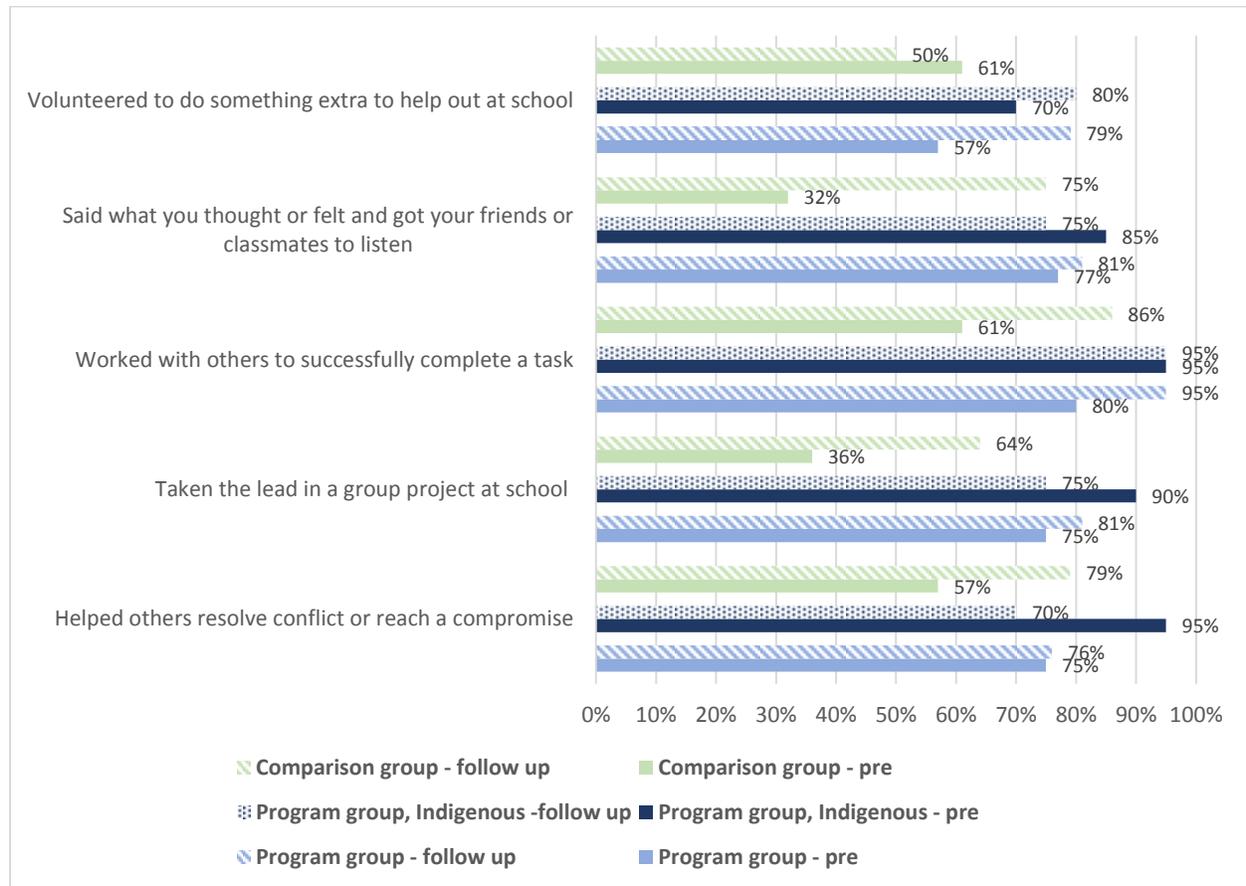
Figure 22. Leadership characteristics influencing adolescent peers, Effect sizes



5.3.2 Leadership behaviours

No standardized instruments measuring leadership behaviours in adolescence that are suitable for this program could be found, so the study relied on the items that have been used by the Program for the past decade. There were no significant changes for the program group, the Indigenous program group, or the comparison group (Figure 23).

Figure 23. Frequency of leadership behaviours, has been done at least once in the past month, Time 1 and Time 3 (Program Group N=91; Indigenous Program Group N=20; Comparison Group N=28)



5.4 Cross-cultural understanding

Two sets of questions were used to assess changes in cross-cultural understanding. The first questions were developed and tested in 2015-16, and refined slightly for use in the current study, and ask respondents about the level of comfort in engaging with Indigenous peoples in various ways. As shown in Figures 24 and 25, the outcomes were excellent for both Indigenous and non-Indigenous respondents, with significant increases on six of the seven items, with most having moderate and large effect sizes, for the overall program group. There was also improvement for the program group overall in their level of comfort in “promoting awareness of Aboriginal culture and heritage within your community,” but the change was not statistically significant. There was no change for the Indigenous group, probably because their level of comfort was very high to begin with.

Curiously, there were improvements on three items for the comparison group as well, including being comfortable advocating or being an ally for Indigenous rights.

Figure 24. Engagement and support for Indigenous peoples, % somewhat/completely comfortable, Test 1 and Test 3 (Program Group N=91; Program Group, Indigenous N=20, Comparison Group N=28)

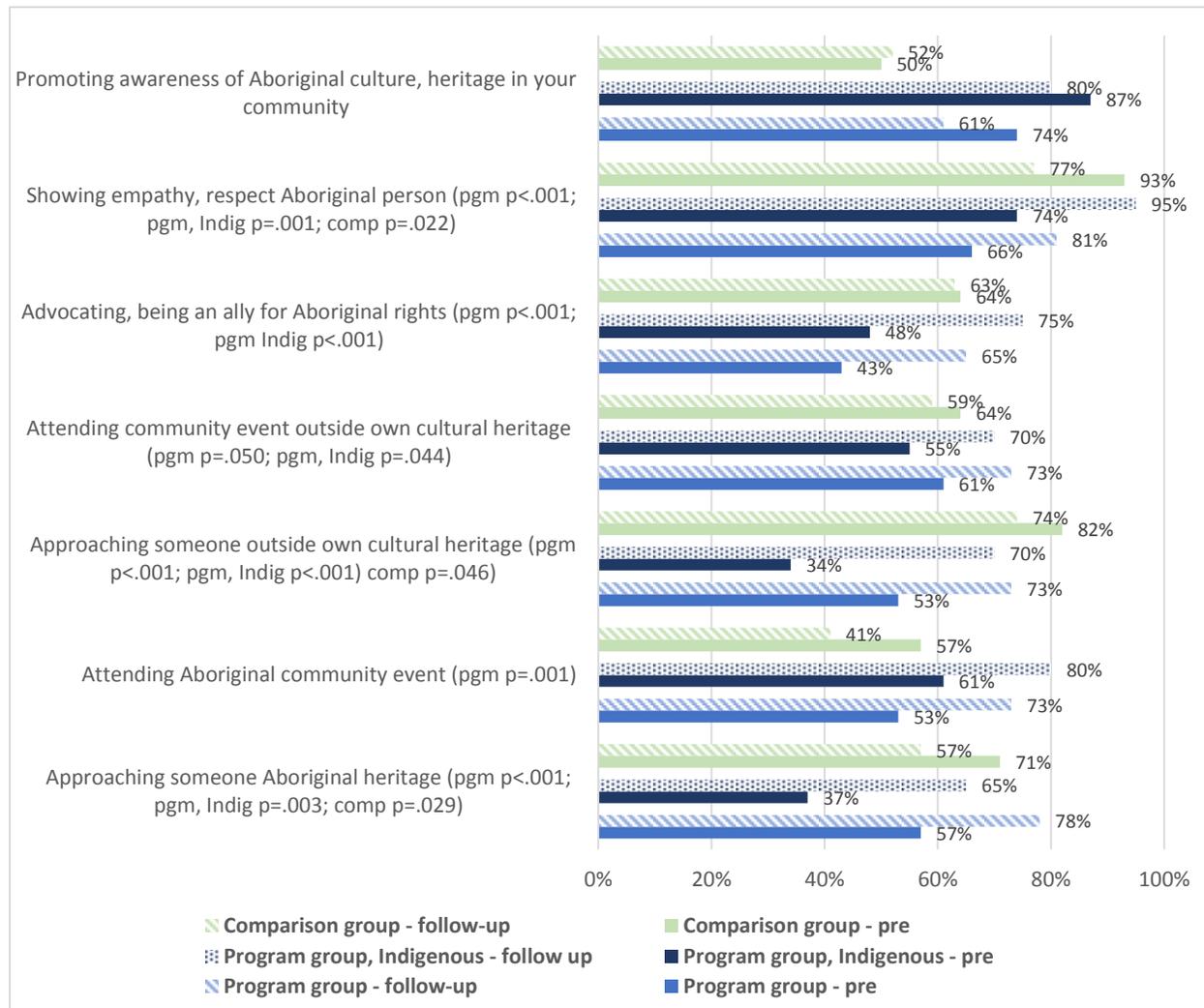


Figure 25. Engagement and support for Indigenous peoples, Effect sizes



The second set of questions were those being piloted in hope of creating the Indigenous Adolescent Identity Scale, drawing on the work of others who have explored concepts of Indigenous identity but not yet in a measurable way. These questions have two parts: the first consists of items previously identified as being critical activities in the attainment of Indigenous identity; the second is a list of traditional Indigenous ceremonies and cultural events modified by the Aboriginal Advisory Committee.

Unfortunately, there were serious data shortcomings with respect to these items. First, as noted earlier, there were no Indigenous respondents in the comparison group, and matching pre-test and follow-up test data were available for only 17 Indigenous respondents on this section of the questionnaire. Second, some non-Indigenous respondents entered highly suspect information on all of the questions about frequency of participation in traditional Indigenous ceremonies or events, which threw the accuracy of all data from non-Indigenous respondents on this section into question, so these data are not reported here. (Careful review of the larger data set indicates that this problem did not extend beyond this section.)

For the Indigenous program group, frequency of participation in traditional Indigenous ceremonies and cultural events did not change for most types of ceremonies and significantly declined on three: Pow Wows, healing circles, and talking circles. The decline in participation is almost certainly a reflection of the timing of the completion of the follow-up test, as most of the respondents on these variables attended a fall on-site program, and would have had few opportunities to participate in a ceremony or event in the preceding month. (These findings are not presented graphically.)

As shown in Figures 25 and 26, there was a significant and moderate-large increase from Time 1 to Time 3 in frequency of “talking about your experiences as an Aboriginal person,” suggesting increased self-confidence and, perhaps, Indigenous pride.

For unknown reasons, there was a large decrease in frequency of “helping Aboriginal people.” There were no other significant changes on any of the other variables because the pre-test scores were high, leaving little room for improvement as captured by these particular indicators. These scores suggest that these respondents were culturally aware and experienced strong cultural pride before participation

in the Program. It should be stressed, however, that only 17 of the total 80 Indigenous participants in the Program in 2016-17, so the data may reflect a self-selection bias

Finally, it is unfortunate that 71% respondents at both test times had personally experienced racism or prejudice in the preceding month. The absence of any change on two variables—“seen or heard something showing Aboriginal people in a positive way” (88%) and “in a negative way” (76%)—suggests a high level of awareness about how Indigenous people are portrayed and described that pre-dated that Program.

Figure 25. Indigenous identity and engagement, % who participated at least once in the past month, Test 1 and Test 3 (Program Group, Indigenous respondents only, N=17)

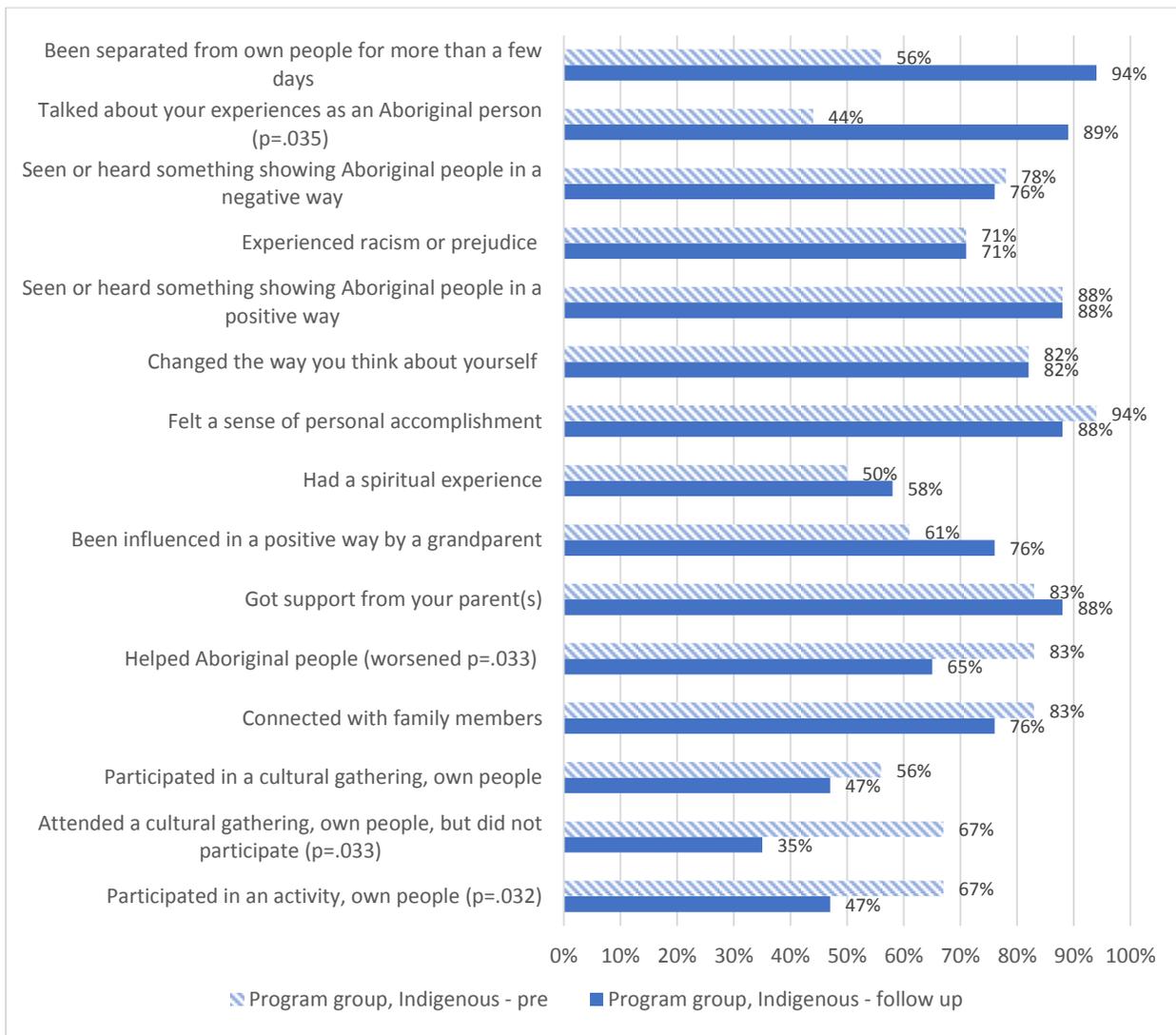
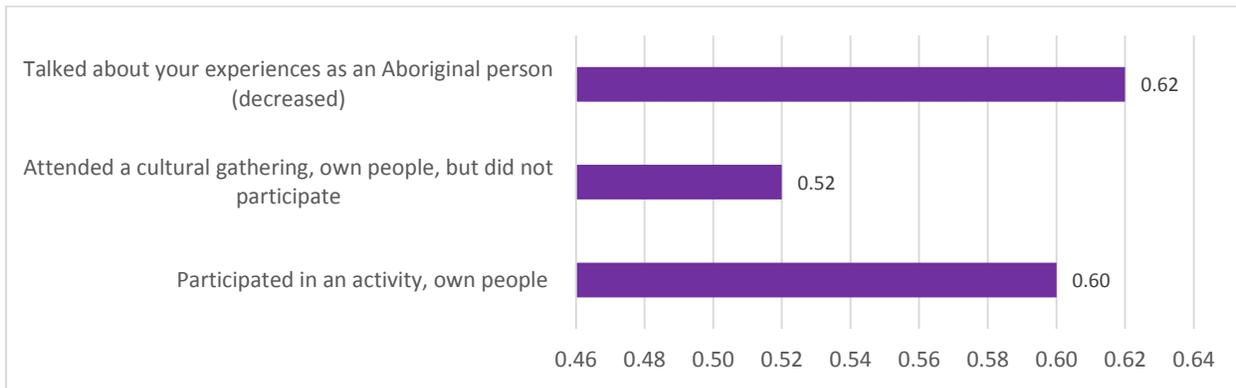


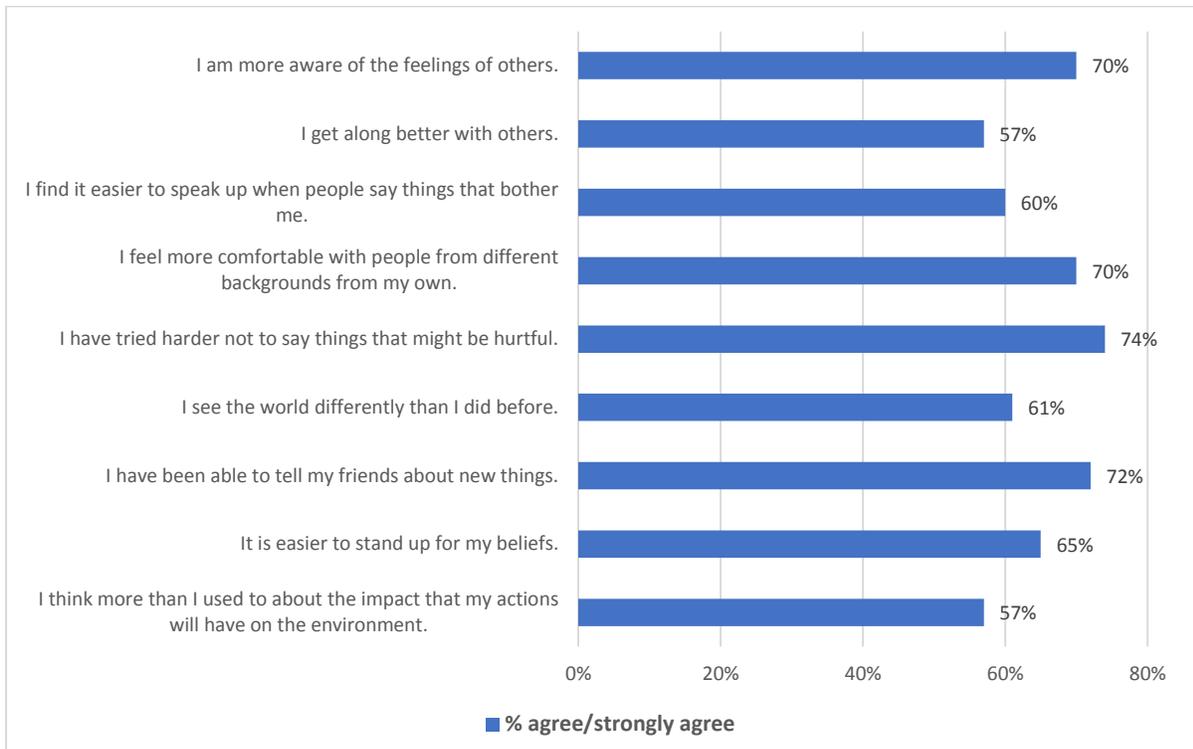
Figure 26. Indigenous identity and engagement, Effect size



6. Participant feedback and satisfaction

The follow-up questionnaire includes a set of questions asking participants to report about their perceptions about things that have changed for themselves because of their participation in the Program. Figure 26, and the following comments about the Program and their experience, show that participants feel that they have been deeply affected and their lives have been profoundly changed by the Program.

Figure 26. Because I participated in Connections... (Program participants N=100)



Twenty-eight students offered additional comments about Connections in the follow-up questionnaire. Several people simply said “thank you” or said they loved the program and had a great time. More comprehensive or unique comments were as follows.

- *I had an amazing time on the Connections trip and it really opened up my eyes to the way that the world could be if we all stopped and took the time to understand what others were going through.*
- *I had so much fun there! Honestly, I really loved it and would like to come back again. I recommend other students as well to go there, because you become so much more confident. It was just an amazing experience that I will always remember.*
- *I had such an amazing time, the Connections opportunity really was an eye-opening experience that I would highly recommend to any other student!! Thank you so much for everything!!!*
- *I hardly experience racism or discrimination in my school, which made me have to answer never for a lot of the questions. Like for “have you ever stood up to bullying in the past month” I answered never because it was true, I haven't seen bullying yet for this month let alone this year.*
- *The 'campfire' was very long and tiring. The food was absolutely amazing. Birthday log was really fun along with the web thing. The presentations were amazing!*
- *Being in the Connections program was a great experience, especially to get away from your devices/media. It helps you build confidence, leadership and also friendship. This was a great opportunity and I would so do it again!! Plus the food was great.*
- *The Connections Program was a great experience and opportunity for me. It was great to meet new students of different religion and beliefs. It also helped me with my confidence and I found that I wasn't so shy when returning to school. I would highly recommend this program to other students next fall!*
- *I think that going to the Connections program changed my perspective and me as a person. I've tried to make a change for the better and I met some amazing people. By far one of the best high school experiences I've had by far and won't forget it!*
- *It was a great experience and it opened my mind greatly. Now I am much more mindful of other people.*
- *It was amazing and the people were great! I want this program to be available for generations to come. It was one of the most enriching experiences of my life.*
- *I think there needs to be less background liberal brainwashing, but other than that it was a great experience. I would recommend it to anyone.*
- *Overall, I loved to program, and it is something that I would recommend to any student, in any grade of high school because I think it is beneficial for everyone to participate.*
- *Thank you so much for this wonderful experience! It was amazing and I learned so much. I will never forget my time spent at Connections!*
- *Too much about the spear chucker's [sic]. What about the white men.*
- *It was a great time. [Connections] should put on an alumni club... [W]e could help out because I would love to go back any day. Also, great food.*

7. Conclusions

This study shows that the CONNECTIONS High School Multicultural Environmental Leadership Program fully achieved and perhaps exceeded its objective to positively influence high school students' knowledge, attitudes, and behaviour with respect to racism and discrimination based on race, sex, sexual orientation, and disability. Based on empirical, published evaluations of structured interventions, the Program boasts effect sizes in some areas that are two to three times larger than those of other programs. This is even more impressive because the current findings apply to behavioural as well as attitudinal change, which do not appear to have been assessed in other studies, and they apply three months after the intensive on-site component of the program, whereas only a few other studies have tested participants after a follow-up period. Finally, the Program succeeded in changing knowledge, attitudes, and behaviours in multiple areas of discrimination, whereas most interventions are specific to one area.

The Program was also successful in increasing awareness of and support for Indigenous peoples and issues among non-Indigenous respondents, with very large increases in comfort in engaging with Indigenous peoples and advocating for and being an ally for Indigenous rights, along with other indicators of cultural knowledge and understanding. Again, these improvements were sustained over time. Due to data limitations it is more difficult to draw firm conclusions about the Program's impact on the Indigenous participants, but the available data suggest that the findings with respect to knowledge, attitudes, and behaviours about racism and discrimination were also true for Indigenous participants. In addition, although there was no Indigenous comparison group, there was a large increase in frequency of "talking about your experiences as an Aboriginal person," suggesting increased self-confidence and, perhaps, Indigenous pride.

The study revealed little change with respect to leadership characteristics and behaviours, but it is possible that the instruments used were not a good fit for the Program. In other parts of the questionnaire, more than half of respondents reported that they had told other students and their parents about what they had learned about racism, sexism, discrimination against religious groups, and discrimination against people with disabilities. In addition, more than half of the participant respondents said that, because they attended the Program, they get along better with others, find it easier to speak up when people say things that bother them, and find it easier to stand up for their beliefs. Findings such as these suggest that there may have been improvements in leadership behaviours that were not captured by the standardized leadership instruments.

With respect to attitudes, knowledge, and behaviours about environmental stewardship, there were both positive and negative outcomes, probably due to the oil industry-related economic downturn in the province, which may have directly affected the program participants' families, in conjunction with climate change denial by American government leaders, both of which occurred over the past couple of years. It is unlikely that any programmatic intervention could have the desired impact on environmental attitudes and behaviours in the context of such profound cultural and economic shifts, and the results might be very different in a year or two, as the economy continues to stabilize and improve.

Overall, the findings from this quasi-experimental evaluation are overwhelmingly positive and confirm that the CONNECTIONS High School Multicultural Environmental Leadership Program is a leader in diversity education. Impact on participants' knowledge, attitudes and, most importantly, behaviours, is very high as reflected by effect size. To date, there do not appear to have been any empirical evaluations of anti-discrimination programs for adolescents that approximate this level of effectiveness.