



**Research Evaluation of  
PCYC Bornhoffen Catalyst  
Intervention Programs for Youth-at-Risk  
[2012-2013]**

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## Executive Summary

Image this hypothetical scenario:

You are 15 years old and you have a difficult home life due to lots of family fighting. You are finding school hard. You don't have many friends. Sometimes you get into fights at school. One of your teachers seems to care - they have offered you a chance to do a 15-day Catalyst program. You would need to keep going to school and then you can do the program which involves hiking, ropes courses, raft building, group activities, camping, and more. There will be a weekend trip initially, to see how you go, and then a 9-day expedition, and a follow-up experience. What do you reckon? How do you feel? What will happen?

You take the plunge. The program is a lot of fun, but also very challenging. It is more physically challenging than you expected, especially the hiking. But it is also socially challenging as you have to learn how to tolerate other people, how to communicate effectively, and how to cooperate to get things done. You are also challenged by your emotional reactions and controlling your behaviours. You miss your family members and look forward to seeing them again and showing them who you have become. You feel more confident in who you are and about making decisions which will take you along the right path. As your confidence and belief in yourself grows, you become more optimistic about the possibilities for your future. You look forward to finishing school and developing plans for your future job and life.

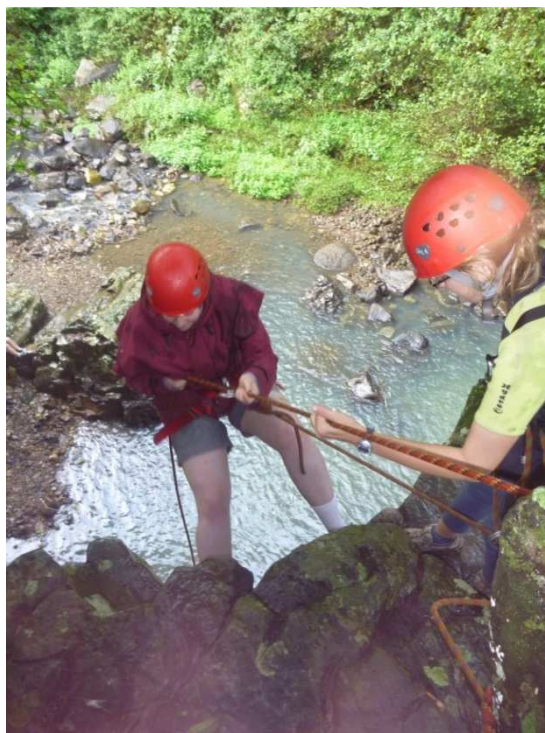
It turns out that this scenario is not-so-hypothetical, but rather a prototypical example of the experience of many Catalyst program participants.

Program evaluation key points – in a nutshell:

1. The 15-day PCYC Catalyst program is an adventure-based intervention for Queensland youth from at-risk backgrounds (due to family, school, social and/or psychological problems). Participants were typically engaged by a teacher at their high school who encouraged them to participate.
2. Longitudinal surveys with youth participants and adult observers indicated positive overall changes for approximately two-third of participants. There were small to moderate positive short- and longer-term changes in most of the targeted life effectiveness skills, psychological well-being was enhanced, and several aspects of behavioural conduct improved. Whilst mostly positive, the measured changes were generally lower than comparative adventure therapy benchmarks. The Catalyst program effected a positive change of approximately 10 to 14%, whilst comparative benchmarks indicate an average positive change of approximately 17 to 19%. Thus, the efficacy of the Catalyst program is promising but could be further enhanced.
3. Interviews with youth participants indicated that they felt supported by the program staff, learnt to trust others, and developed self-belief, positive thinking, and persistence in overcoming problems. Reported program highlights were the high adventure and group activities, whilst the lowlights were the physical challenges of hiking.
4. Interviews with staff highlighted the importance of implementing a revised selection and screening process to target and identify at-risk participants who were motivated to engage in opportunities for change. Staff perceived that the program was well conducted, with most participants engaging willingly in most program activities, leading to enhancement of participants' self-esteem and self-confidence. Nevertheless, there were some participants in each group for whom the program appeared to have no appreciable impact. At times there was some notable group conflict which challenged staff's conflict resolution skills, but which was generally effectively resolved. There was some concern expressed by staff about the financial sustainability of the program.
5. Key recommendations for future program development include improving the screening process, exploring ways to better prepare participants for the physical challenge of hiking, staff training in managing group conflict, increasing exposure to high adventure activities, reviewing the use of reflective activities, redesign of the follow-up component, and revising the evaluation procedures.

This study reports on the short- and longer-term impacts of PCYC Bornhoffen Catalyst Programs on youth participants from multiple perspectives (self and observer) and multiple data sources (questionnaires and interviews). Catalyst is an adventure-based intervention program for adolescents who are at-risk of behavioural, psychological, and social problems. Catalyst aims to improve youths' personal and social life effectiveness, mental health, and behavioural conduct. This evaluation focuses on the 56 participants in six Catalyst programs conducted in Queensland during 2012 and 2013.

There were notable short- and long-term improvements in life effectiveness, psychological well-being, and several aspects of behavioural conduct. There was no longer-term impact on psychological distress and some areas of behaviour. Overall, positive changes were evident for approximately two-thirds of participants. Observers (facilitators and teachers) tended to report greater positive change compared to youth participants' self-reports. Although generally positive, the size of the outcomes from the Catalyst program was lower than for comparative benchmarks from Bowen and Neill's (2013) meta-analysis of adventure therapy programs.



A more detailed summary of the results is:

### **Life effectiveness skills**

1. Youth participants' self-ratings indicated small, positive, short-term changes (from the beginning to the end of the program) in all the measured domains of personal and social life effectiveness skills, with an overall effect size (ES) of .16 (an 8% change;  $n = 36$ ). There were small to moderate, positive, longer-term changes in all personal and social life skills, with an overall ES of .30 (a 12% change;  $n = 29$ ).
2. Observer ratings indicated moderately large positive short-term changes in life effectiveness skills (ES = .60, a 29% change;  $N = 39$ ) and small positive longer-term changes (0.24, a 12% change;  $N = 24$ ).

### **Mental health**

1. Youth participants' self-reported a small overall worsening of their mental health in the short-term (during the Expedition;  $ES = -0.12$ , a 5% change), however they reported a small to moderate improvement in mental health in the longer-term ( $0.35$ , a 14% change) ( $N = 39$ ).
2. These overall mental health self-reported results over time were made up of separate results for psychological distress and psychological well-being. There was a small to moderate short-term heightening of psychological distress during the Expedition ( $-0.34$ , a 13% change), probably due to the challenging physically, social, and emotional conditions. However, this apparent heightening of psychological distress was largely temporary, with participants reporting only a very small longer-term change ( $-0.10$ , a 5% change). Participants reported little short-term change for psychological well-being ( $0.08$ , a 4% change), but substantial positive improvements in longer-term psychological well-being ( $0.80$ , a 29% change).
3. Observer ratings of mental health indicated a different pattern ( $N = 23$ ). Observer ratings indicated a large positive short-term enhancement of psychological well-being ( $0.80$ , a 29% change) and a very small short-term reduction of psychological distress ( $0.12$ , a 6% change). In the longer-term, observer ratings indicated no change in psychological well-being ( $0.00$ , a 0% change) and a small heightening of psychological distress ( $-0.29$ , an 11% change).

### **Behavioural conduct**

1. Youth participants' self-ratings indicated small, positive, longer-term improvements in behavioural conduct ( $ES = 0.12$ , a 5% change).
2. Observer ratings indicated a small to moderate longer-term improvements in behavioural conduct ( $0.27$ , an 11% change).

Although generally positive, the size of the outcomes from the Catalyst program was slightly lower than for comparative benchmarks from Bowen and Neill's (2013) meta-analysis of adventure therapy programs: youth participants' self-reported longer-term positive change of 12% in life effectiveness ( $ES = 0.30$ ) compares to a benchmark of 17% ( $ES = 0.45$ ). For mental health, youth participants reported a long-term positive change of 14% ( $ES = 0.35$ ) compared to a benchmark of 19% ( $0.49$ ). For behavioural conduct, youth participants reported a long-term positive change of 10% ( $ES = -0.25$ ) versus a benchmark of 19% ( $-0.50$ ). These differences are not statistically significant.

Youth participants were also asked to rate the Catalyst program, the outcomes, and their satisfaction with the program:

1. On average, youth participants indicated that it was "mostly true" that they had improved in their personal ( $M = 6.2$  out of 8) and social (5.8) effectiveness as a result of the program, with a slightly stronger endorsement of change in personal than social skills.
2. Youth participants rated the program facilitators highly (6.4). There were many positive comments and no negative comments were made about the facilitators.
3. Youth participants provided mixed ratings and comments about the group dynamics (5.5). Roughly half of the comments indicated that the group worked well together whilst the other half reported that there were group difficulties such as formation of cliques and challenges in resolving social conflict.
4. On average, youth participants felt that it was "mostly true" (5.8) that they become fully involved in the group, however half of the comments about group participating were about a lack of group involvement.
5. On average, youth participants rated the Catalyst program very highly (6.7). Each of the three program components was also rated very positively: Lead-in (6.6), Expedition (6.5) and Follow-up (6.2).
6. In terms of the level of challenge (ease versus difficulty), the Lead-in was rated as about right (4.7; mid-point is 4.5), the Expedition as somewhat too hard (5.5), and the Follow-up as somewhat too easy (3.8). In terms of length, the Lead-in was rated as about right (4.7), the Expedition as somewhat too long (5.9) and the Follow-up as somewhat too short (3.9).

During interviews with 14 youth participants, they expressed a range of generally positive responses about the Catalyst program. Key points included that:

1. Youths typically came from at-risk backgrounds due to family, school, social and/or psychological problems, and were typically engaged by a teacher at their high school who encouraged them to participate.
2. Youths felt supported by the program staff as they faced personal and social challenges during the program, including learning to trust others, and developing self-belief, positive thinking, and persistence in overcoming problems during the Expedition.
3. Youths found the Expedition hiking the most difficult component of the program, yet this was also appeared to be the key component in helping the participants to develop their self-esteem and mental toughness.
4. The highlights of the program typically included the high adventure activities such as abseiling, caving, and canoeing, as well as playing group games.
5. Lowlights typically included the toughness of hiking.
6. The youths reported that they developed positive relationships with staff. They also often reported that they developed at least one positive peer relationship, if not several, through the program.
7. Youth participants reported that they looked forward to applying their learning at home and school and to further engagement with the Catalyst program, through the Follow-up.

Interviews with nine Catalyst and accompanying school staff highlighted these points:

1. A critical challenge is for Catalyst staff to work with high schools is to identify, engage, and select a group of youth participants who have problems but who are motivated towards, and capable of, learning how to cope better and take positive actions to change their futures. The program could benefit from further revision to the intake and profiling process.
2. Each of the program components (Lead-in, Expedition, and Follow-up) appears to have been well conducted.
3. Lead facilitators have considerable responsibility for the design and delivery of the program which has generally been effective but contributes to some inconsistencies between programs.
4. For the program to build on its potential, grow and develop further, the involvement of a senior adventure therapist to guide program design, provide staff training, and supervision would be beneficial.
5. Most youth participants engaged willingly in most program activities, although typically a few participants who were on the Lead-in did not continue their participation.
6. Program staff observed improvements in self-esteem and self-confidence as, arguably, the most common outcomes, followed by the development of social skills, awareness of the effects of one's behaviour on others, and the positive experience of being in a supportive group.
7. Management of group processes required considerable skills, patience, and effort on the part of facilitators to negotiate and maintain awareness of group agreements. Participants appeared to struggle somewhat with self-reflection activities and facilitators had to work hard to help facilitate reflections about how participants' personal actions had consequences for themselves and others.
8. In each program, there appeared to be some participants who derived clear, positive growth and benefits, whilst for other participants the signs of change were still in their early stages, and for some participants, there were no obvious signs of change.
9. The organisational sustainability of the program needs consideration as the Catalyst program is not core-funded by PCYC and so is dependent on external funding. In order for the Catalyst program to be sustainable into the future, it is likely to need at least some strategic core funding commitment from PCYC.

The key recommendations arising from these program evaluation results include:

1. **Nomenclature** - The Catalyst program is arguably more accurately described as “therapeutic adventure” (rather than “adventure therapy”). Few, if any, adventure-based intervention programs in Australia currently meet the criteria for “adventure therapy. If it was sought for the Catalyst program to become recognised as adventure therapy program, it would probably be necessary to engage in client diagnosis, adoption of therapeutic processes and techniques with a stronger theoretical and empirical basis, and for the programs to be supervised by staff with recognised qualifications in psychology.
2. **Screening** – Screening of potential participants was key to the success of the Catalyst program. It is critical that youths’ participation is voluntary and well-informed, although teacher support and encouragement is also vital. The target criteria for youth participants needs to be clearly understood by participating schools to help ensure optimal selection of target participants who are likely to benefit from the program.
3. **Physical challenge of initial Expedition hiking** – During interviews, participants’ main complaint related to the physical challenge of the Expedition hiking, particularly in the initial days. Many participants also recognised this physical challenge as an important part of their overall learning process. Nevertheless, the extent of physical challenge involved could be more clearly and consciously communicated during recruitment and screening. Some strategies could also be considered for mitigating (but not removing) the physical challenge of the initial up-hill Expedition hiking (e.g., pre-Expedition fitness training, closer scrutiny of pack weights, and/or providing more gear swap/food resupply opportunities during the Expedition).
4. **Group storming and norming during the Expedition** – Many participants were significantly challenged by difficult group relations during the Expedition. Most groups eventually succeeded in learning how to live and work effectively together, with the assistance of facilitators. It could be beneficial to explore additional and/or best-practice strategies for group and facilitation management as facilitation methods varied considerably according to facilitator. Perhaps the best ideas from amongst different facilitators about group management techniques could be pooled, reviewed, and then become more standard.
5. **High adventure activities** – The highlights of the program for participants were the “high adventure” activities. It could be useful to consider ways in which the program might increase exposure to such activities (e.g., maximising time on activity and/or including multiple or longer sessions and/or additional high adventure activities). Other activities that may be possible include rock climbing, orienteering, creeking, swimming hole activities, and additional group initiative challenges.
6. **Reflective activities** – Many participants struggled with self-reflective activities (such as journal writing). Nevertheless, these activities were important in helping to develop self-awareness, self-understanding, and self-disclosure. Implementation of these activities could be reviewed and potentially revised to help them to achieve greater impact.
7. **Follow-up activities** – Participants rated the Follow-up component less favourably than the Expedition and Lead-in components. Participants appeared to expect a more challenging capstone experience.
8. **Future evaluation** – An on-going program evaluation framework for monitoring program impacts should be developed. A future evaluation approach could use streamlined versions of the current evaluation tools and aim to provide closer to real-time program monitoring and feedback.
9. **Program sustainability** – The Catalyst program is well situated for future viability in terms of its location, facilities, equipment, expertise, and relevance to the needs of youth-at-risk. However, the program’s sustainability appears to be vulnerable due to its reliance on short-term cycles of external funding. The program warrants consideration for further development and possible expansion through core funding.



## Introduction

### Background

The main purpose of this research evaluation project was to examine the effectiveness of the 2012-2013 Catalyst programs in achieving their targeted youth development objectives. The second purpose was to identify which aspects of the program processes and outcomes appear to be working well and which aspects can be recommended for improvement. The third purpose is to facilitate the capacity of the program staff to undertake ongoing evidence-based program evaluation.

Key steps involved in the evaluation included:

1. Operationalising the program objectives
2. Describing, contextualising, and reviewing the intervention model
3. Examining the short- and longer-term effectiveness of the program in facilitating youth development and benchmarking the outcomes
4. Proposing an ongoing evaluation model

The research evaluation design involves a longitudinal (Pre, Post, and Follow-up), mixed-method (quantitative and qualitative), multiple-perspective (self and observer) research study to examine the impacts of the Catalyst program on 53 youth participants. More specifically, this study collected quantitative (numeric) data using self and observer measures of generic life skills, mental health, and behavioural conduct and qualitative (non-numeric) data using semi-structured interviews and case studies.



## Youth-at-risk

Ensuring young people get the best possible start in life is central to the health, social inclusion, and productivity agendas of the Australian Government (Australian Institute of Health and Welfare, 2008). In undergoing the critical transition from childhood to adulthood, young people face threats and dangers from themselves, others, and society at large (Kelly, 2000). Thus, there is a cultural need to protect, monitor, contain, and sustain young people (Sharland, 2006). Of concern, in particular, are young people who are at-risk of manifesting negative life trajectories with regard to their psychological well-being, education and career, and/or civic or social contributions.

Risk taking is a healthy and desirable component of young people's lives and development. Taking risks is intrinsically linked to identity formation, and ideally supports the growth of an integrated sense of self, self-esteem and self-regulation (Sharland, 2006). Young people are also increasingly expected to become the architects of their own lives (Crime Prevention Victoria & Australian Institute of Family Studies, 2003). This increasing independence, however, brings many challenges and risks of negative, as well as positive, developmental outcomes. As adolescence is a critical period for the emergence and entrenchment of cognitive and behavioural patterns, positive experiences during this period help to enable a young person to achieve and maintain a healthy and productive life (Cunneen & White, 2011). However, negative experiences can put individuals on problematic pathways which, for some, persist into adulthood and involve considerable costs for individuals, families and the community (Crime Prevention Victoria & Australian Institute of Family Studies, 2002).

The risks encountered by young people operate across a variety of contexts which can be categorised as individual, family, school-based, life-events, and societal (Crime Prevention Victoria & Australian Institute of Family Studies, 2002). The more proximal the risk factor, the greater its influence (Walker & Shinn, 2002). In addition, the onset, frequency, persistence and duration of risks matter; the more risks one is exposed to and the longer the exposure, the greater the potential negative impact upon the individual's well-being (Welsh & Farrington, 2010). Risks also often overlap, so the presence of one risk can make the occurrence of another risk more likely. An individual's degree of exposure to risk for negative outcomes can be categorised as:

1. Typically developing youth, with no elevated concern of risk for negative outcomes;
2. Youth with an elevated risk status for negative outcomes; and
3. Youth who show signs of life-course-persistent risk of negative outcomes (Walker & Shinn, 2002).

Negative psychosocial developmental outcomes can be characterised as being either internalised (e.g., anxiety and depression) or externalised (e.g., aggression, violence, delinquency, school failure and dropout, sexual harassment, unsafe sexual practices, dangerous driving, substance abuse). Such problems are associated with higher rates of injury among young people and, in the longer-term, a range of health conditions and associated risk factors (e.g., mental health disorders, chronic and communicable diseases, and overweight and obesity) which may emerge and continue into adulthood (Australian Institute of Health and Welfare, 2008). The problems that youth-at-risk experience are clearly evident in health<sup>1</sup>, education<sup>2</sup>, and crime<sup>3</sup> statistics.

<sup>1</sup> A quarter (26%) of Australian adolescents aged 14 to 19 years had high alcohol use, 10% smoked tobacco, and 16% used an illicit drug in the previous 12 months (Australian Institute of Health and Welfare, 2008). Mental health disorders account for almost 50% of the disease cost for the 15 to 24 year age group (Australian Institute of Health and Welfare, 2008), with 6 to 7% engaging in self-harm in any 12-month period (Martin, Swannell, Hazell, Harrison, & Taylor, 2010).

<sup>2</sup> Attendance declines during secondary school in Australia and remains below primary school levels (COAG Reform Council, 2013). Approximately 15% leave before Year 12 (80% of females complete, whereas 69% of males complete), with Indigenous students being almost half as likely to complete Year 12 (43% retention rate) (COAG Reform Council, 2013). Young people living in remote or very remote locations and Indigenous young Australians continue to experience far lower education and training engagement and achievements (Foundation for Young Australians, 2013). Approximately 1 in 14 students do not reach the minimum standard in literacy, and approximately 1 in 15 in numeracy (COAG Reform Council, 2013). During 2006 to 2012 in New South Wales, the number of long suspensions (up to 20 school days) increased by 47.5%

## Youth-at-risk intervention programs

Intervention programs can decrease the likelihood of youth-at-risk developing negative life trajectories. Programs can be characterised by the point at which they engage in an individual's development:

1. Primary prevention aims to enhance protective factors and keep minor problems and difficulties from emerging. It targets the whole population and also targets specific groups.
2. Secondary prevention aims to counteract or stop harm from exposure to known risk factors. It targets individuals with early warning signs of developing negative life trajectories and aims to help support the individual towards a positive life trajectory.
3. Tertiary prevention aims to reduce, rather than reverse, harm amongst the most severely at-risk individuals who have established problems. It also aims to minimise the potential for future problems and their consequences (Chan et al., 2004; National Public Health Partnership, 2006; Weissberg, Kumpfer, & Seligman, 2003; Williams, Holmbeck, & Greenley, 2002).

Earlier prevention strategies are preferred over those which are implemented after problems have become entrenched (Crime Prevention Victoria and Australian Institute of Family Studies, 2002). Early prevention is an efficacious and cost-effective approach to promoting positive development and preventing potential problems for youth exposed to negative risk factors (Commonwealth of Australia, 1999; Walker & Shinn, 2002). Prevention programs use a wide range of models and techniques, variously aimed at reducing opportunities for problem behaviours to arise or become established, enhancing social opportunities for individuals and groups, and facilitating social empowerment and institutional change (Cunneen & White, 2011).

Several prevention programs have been evaluated in recent decades to assess their effects on delinquency, youth mental disorders, and substance abuse, including Cognitive-Behavioural Therapies, family-based therapies, justice-system interventions, residential treatment programs, and adventure-based programs.

Cognitive-Behavioural Therapy has been widely used for individual and group treatment of youth with mental health issues, social behaviour problems, and comorbid conditions (Kendall, 2012). Cognitive-Behaviour Therapy aims to increase positive behaviours and thoughts, decrease negative behaviours and thoughts, and improve interpersonal skills (Szigethy, Weisz, & Findling, 2012). Cognitive-Behaviour Therapy techniques include identification and modification of maladaptive thoughts and behaviours, skill building, anger management, rehearsal, role taking, and contingent reinforcement (Van Bilsen, 2013). Meta-analyses of Cognitive-Behaviour Therapy programs have shown effectiveness in reducing recidivism rates (Landenberger & Lipsey, 2005), substance use problems (Waldron & Turner, 2008) and mental health difficulties (Compton et al., 2004). Meta-analytic reviews of Cognitive-Behavioural Therapy for youth have found effectiveness in reducing anxiety ( $d = .98$ ; 30 studies; James, James, Cowdrey, Soler, & Choke, 2013), criminal offending ( $d = .84$ ; 58 studies; Landenberger & Lipsey, 2005), anger ( $d = .67$ ; 40 studies; Sukhodolsky, Kassinove, & Gorman, 2004), antisocial behaviour ( $d = .48$ ; 30

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(NSW Department of Education and Communities, 2013), with students in Years 7 to 10 accounting for 74% of all long suspensions. Six percent of Year 7 to 10 had received a long suspension, primarily (87%) due to physical violence and persistent misbehaviour (NSW Department of Education and Communities, 2013). Youth unemployment, underemployment, and labour underutilisation has also been increasing, with young Australians delaying full-time work, independence from parents, marriage, starting a family, and owning a home (Foundation for Young Australians, 2013).

<sup>3</sup> The cost of crime in Australia represents 4% of national gross domestic product (Australian Institute of Criminology, 2008). Since 2010, the offending rate has been highest in the 15 to 19 year age group (Australian Institute of Criminology, 2013) with an increase in the seriousness of offences for which juveniles have been apprehended over the last few decades (Cunneen & White, 2011). In 2010 to 2011, the offending rate of 15 to 19 years was almost three times the rate for all other offenders in other age groups (Australian Institute of Criminology, 2013). The major reasons for young people's contact with police relate to theft, property damage, physical assault and sexual assault (Australian Institute of Criminology, 2013; Cunneen & White, 2011). As a result, approximately 7,000 young people (aged 10 and older) are under youth justice supervision in Australia due to their involvement or alleged involvement in crime (Australian Institute of Health and Welfare 2013).

studies; Bennett & Gibbons, 2000), substance abuse ( $d = .45$ ; 17 studies; Waldron & Turner, 2008) and depression ( $d = .34$ ; 31 studies; Weisz, McCarty, & Valeri, 2006).

Family-based interventions include Multi-Systemic Therapy, Functional Family Therapy, Multi-Dimensional Family Therapy, and Brief Strategic Family Therapy. These interventions assume that juvenile antisocial behaviour is developed and maintained through maladaptive family interactions, structures, and patterns (Tarolla, Wagner, Rabinowitz, & Tubman, 2002). The therapies aim to improve parenting skills (e.g., child/parent communication patterns and skills, behavioural contracting, specification of rules, and positive reinforcement), as well as youth social, coping, and regulation skills (Greenberg & Lippold, 2013). Additionally, they seek to address problems in the broader family system, as well as youth interactions in other domains (e.g., peer and school settings) (Henggeler & Sheidow, 2012). Family-based interventions are associated with reductions in adolescent substance use, delinquency, recidivism, associations with deviant peers, and with improvements in educational outcomes and family functioning (Farrington & Welsh, 2003; Liddle, Rowe, Dakof, Ungaro, & Henderson, 2004; Szapocznik & Williams, 2000; Waldron & Turner, 2008). A meta-analysis of the effectiveness of family-based crime prevention programs reported small significant short-term reductions for offending outcomes ( $d = .22$ ; 40 studies) and delinquency outcomes ( $d = .32$ ; 19 studies), and a small non-significant short-term reduction for antisocial behaviour outcomes ( $d = .20$ ; 27 studies; Farrington & Welsh, 2003).

Multi-Systemic Therapy is an intensive, family-focused and community-based intervention for families of adolescents with social, emotional, and behavioural problems. It uses a combination of empirically-based treatments (e.g., Cognitive-Behavioural Therapy, behavioural parent training, functional family therapy) to address multiple variables (e.g., family, school, peer groups) that have been identified as factors in juvenile and antisocial behaviour (Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 2009). Multi-Systemic Therapy aims to reduce adolescent criminal activity and antisocial behaviour by empowering youth and their parents with the skills and resources needed to independently address difficulties and manage their complex environmental and social problems (Littell, Popa, & Burnee, 2005). Multi-Systemic Therapy has a relatively strong research base, with program effects including longer-term reductions in rearrest, severity of crimes committed, reduced risk of out-of-home placement, and improvement in academic outcomes (Henggeler & Sheidow, 2012). A meta-analysis of the effectiveness of Multi-Systemic Therapy reported a moderate significant short-term reduction in antisocial behaviour and psychiatric symptoms ( $d = .55$ ; 11 studies; Curtis, Ronan, & Borduin, 2004).

Juvenile court systems have implemented several systems to reduce youth delinquency and reoffending, including restorative justice, Adolescent Diversion Programs, and changes in adjudication and sentencing (Cunneen & White, 2011). Restorative justice aims to increase the involvement of criminal offenders with the victims of their crime and the greater community through the voluntarily meeting of the offender with the victim to discuss the crime and to decide ways to repair the harm (Rodriguez, 2007; Strang, 2001). A meta-analysis by Latimer, Dowden, and Muise (2005) concluded that restorative justice is a promising approach for adolescents. Adolescent Diversion Programs divert youth from the juvenile justice system and instead refer them to community-based services. A meta-analysis of the effectiveness of Adolescent Diversion Programs reported a small non-significant short-term reduction in recidivism ( $d = .10$ ; 28 studies; Schwalbe, Gearing, MacKenzie, Brewer, & Ibrahim, 2012).

Residential Treatment Programs are for youth who have medium to high emotional and behavioural support needs. They provide stays of varying periods in a non-family setting, from a few weeks to several months (Brady, 2002). Residential Treatment Programs range in degree of restrictiveness from treatment foster care and community-based group homes through to psychiatric hospitals (McCurdy & McIntyre, 2004). Residential Treatment Programs provide short-term housing as well as development of other skills, support, and activities necessary for recovery. Together with specialised therapeutic treatment, these needs are addressed through intensive supervision and group work in a highly structured environment (Knorth, Harder, Zandberg, & Kendrick, 2008). They are often family-focused and can include vocational education and training. Reviews on the outcomes of Residential Treatment Programs suggest that they

improve functioning for many, but not all, youth (Frensch & Cameron, 2002; Hair, 2005; Knorth et al., 2008). However, gains made by youth during treatment are not easily maintained and tend to dissipate over time (Frensch & Cameron, 2002). Post-discharge changes depend on family involvement, community support, and aftercare services (Hair, 2005). A meta-analysis of the effectiveness of Residential Treatment Programs reported moderate significant short-term reduction in internalising problem behaviour ( $d = .45$ ; 7 studies) and externalising problem behaviour ( $d = .60$ ; 5 studies; Knorth et al., 2008).

### Adventure-based interventions

Adventure-based interventions generally combine small groups, contact with nature, adventure-based activities, and eclectic therapeutic processes to create opportunities for change in participants with the purpose of supporting an individual (or family) to move towards greater health and well-being (Pryor, 2009). Adventure-based interventions can operate in a wide range of settings and utilise diverse and innovative practices to achieve a variety of outcomes (e.g., recreation, enrichment, training, education, prevention, early intervention, respite, treatment, recovery, palliative care) (Pryor, Carpenter, & Townsend, 2005). Adventure-based intervention programs may be as brief as one-day activities, are often multi-day residential camps, but could also take place over several weeks or months. Programs may be one-off experiences or may involve lead-in and follow-up components and/or weekly activities.

Adventure-based interventions may aim to be recreational (to have fun), educational (to learn), developmental (to grow and develop), or therapeutic/redirectional (to help resolve dysfunction) (Neill, 2006). According to Williams (2004), there should be further distinction made between “therapeutic adventure” and “adventure therapy” as there may be substantial differences in processes and outcomes (see Table 1).

Table 1

*Key Differences Between “Therapy” and “Therapeutic” (adapted from Williams (2004, p. 2013))*

Process	Therapy	Therapeutic
Diagnosis (problem identification)	Required	Not required
Outcomes	Specific remedial outcomes are intended	Non-specific or serendipitous outcomes
Intervention	Targetted intervention that treats the identified problem	Generalised intervention
Program design and decision-making	Based on a body of theoretical knowledge	Need not rely on guiding framework
Research and evaluation	Systematic research and evaluation on processes and outcomes	Does not rely so heavily on research
Facilitation	Facilitation by trained therapists	Specialist therapy training not needed

### Benchmarks for adventure-based interventions

Benchmarks for evaluating the effectiveness of adventure-based interventions can be drawn from relevant meta-analyses. Meta-analysis draws together empirical literature about a specific topic. The key meta-analytic studies which can be recommended as a basis for comparison with adventure-based interventions for youth have focussed on adventure education (Hattie et al., 1997), adventure therapy (Bowen & Neill, 2013) and wilderness therapy for delinquency (Wilson & Lipsey, 2000). In Hattie et al. (1997) and Bowen and Neill (2013), participant age predicted outcomes, with adult-age participants reporting stronger positive outcomes than youth participants). Thus, age-appropriate benchmarks should be used where possible. Furthermore, the size of outcomes depends on the type of outcome being measured. Thus,

where possible, comparisons should be made with benchmarks based on similar outcomes where possible.

In the major meta-analysis of adventure education programs to date, Hattie et al. (1997) analysed 96 studies about measured effects of such programs. The overall short-term effect size<sup>4</sup> was positive and moderate (ES = 0.34), with a small additional positive effect size during the follow-up period (ES = 0.17), suggesting a moderate longer-term overall effect size of approximately 0.51<sup>5</sup>. For delinquents, there were similar positive short-term outcomes (ES = 0.33) with considerable additional positive change during the follow-up period (ES = 0.34), suggesting a moderately large longer-term overall effect size of approximately 0.67. For school-aged participants, there were smaller positive short-term outcomes (ES = 0.21), followed by additional positive effects (ES = 0.19), suggesting a moderate longer-term overall effect size of 0.40.

In the major meta-analysis of adventure therapy program outcomes to date, Bowen and Neill (2013) analysed 197 studies of outcomes for adventure-based intervention programs with therapeutic intent. The overall short-term effect size was 0.47, with little additional change during the follow-up period 0.03, suggesting a longer-term overall effect size of 0.50. For 10 to 17 year olds in this study, the short-term effect size was 0.44, suggesting a moderate longer-term overall effect size of 0.47.

A third major meta-analysis of relevance to the current study focused on 22 studies of wilderness therapy programs for delinquency (Wilson & Lipsey, 2000). The overall effect size was positive, but relatively small compared to the other studies (0.17), perhaps because it focused on behavioural indicators such as recidivism and antisocial behaviour. Of particular note was that outcomes varied according to intensity (high intensity wilderness challenge programs, such as those that employ strenuous solo and group expeditions and other difficult physical activities, produced larger delinquency reductions than programs that employed less rigorous activities) and whether the program incorporated a distinct therapy component (programs with a distinct therapy component resulted in lower delinquent and antisocial behaviour than those without such enhancements).

Overall, these meta-analytic studies (and other similar studies, e.g., see Neill, 2009) indicate that a typical adventure-based intervention with therapeutic intentions targeting youth for which there is publically reported outcomes tends to have a moderately positive longer-term effect on measured outcomes (including clinical, self-constructs, interpersonal skills etc.) or, more specifically, a change of approximately half a standard deviation, or a standardised mean effect size of .40 (16% change) and .50 (19% change)<sup>6</sup>.

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<sup>4</sup> The data analysis section explains effect sizes in more detail.

<sup>5</sup> The short- and longer-term effect sizes from the Hattie et al. meta-analysis study can be added to estimate a longer-term overall effect size.

<sup>6</sup> By converting an effect size to an area under a normal curve we can translate say an ES of say 0.50 to meaning that a group which originally scored on the 50th percentile is now scoring on the 69th percentile – or that they are now higher than 69% of the original cohort scores. This can be calculated using the area under the normal curve, such as via

[http://davidmlane.com/hyperstat/z\\_table.html](http://davidmlane.com/hyperstat/z_table.html)



## The Catalyst Program

The Catalyst program is an adventure-based intervention program for young people (aged 13 to 16 years) who are considered to be at risk of adverse outcomes in their educational, vocational, and life-course pathways. The program's primary aim is to help young people to make positive life choices, experience a meaningful life, make a positive contribution to their community, and to assist in the transition into young adulthood. The intervention program applies early intervention strategies to support individuals, families, and communities.

The Catalyst program is intended to serve as a "catalyst", that is, the start of a process which aims to help a young person to improve his or her current life trajectory (PCYC Bornhoffen Adventure Development, 2010). Catalyst programs are conducted by the Bornhoffen Police Citizens Youth Club (PCYC) in Queensland, Australia. The PCYC is a non-profit youth development organisation, which partners with the Queensland Police Service. PCYC's vision is to improve communities through youth development. PCYC Bornhoffen is one of 55 PCYC Queensland clubs.

PCYC Bornhoffen's Catalyst programs began in 2005 with seed funding from Queensland Rail. Since this time, a substantial project that partners with schools (Department of Education or Learning centres) and other regional PCYCs in Queensland has evolved. Catalyst has attracted a variety of corporate and government sponsors, including support from the Blue Light Association since 2008.

The Catalyst intervention model is based on the Adventure Based Counselling approach established by Project Adventure in the early 1970's (Gass, Gillis, & Russell, 2012; Schoel & Maizell, 2002; Schoel, Prouty & Radcliffe, 1988). Adventure Based Counselling uses an experiential learning approach in the context of group-based adventurous activities for psychological and social development or therapeutic purposes.

Catalyst programs are conducted with groups of approximately 10 participants selected by state high schools and/or partner agency. Groups are typically lead by two PCYC Bornhoffen facilitators who have training and expertise in conducting a broad range of outdoor adventure activities, youth work skills (such as counselling), and group facilitation and management skills. The facilitators are accompanied by two teachers or caseworkers from the partner agency who help to provide skills, such as behaviour management, which are important in working with youth-at-risk.

Catalyst programs consist of 15 programming days delivered over a 10 to 12 week period. The key program components are:

1. 3-day Lead-in,
2. 9-day outdoor adventure Expedition, and
3. 3 separate Follow-up days.

In addition, as a part of the partnership with schools, teachers are required to conduct eight additional hours of mentoring per participant (before, during, and after). To date, there have been several hundred Queensland youth participants (2005-2013).

### Catalyst program objectives and their measurement

Thirteen youth development objectives were identified as targets of the PCYC Bornhoffen Catalyst Program as a result of:

1. Reviewing existing program documentation (including PCYC Bornhoffen Adventure Development, 2010)
2. Consultative discussions between the researchers and the program staff
3. A program evaluation needs assessment completed by two Catalyst program staff using the tool developed by Gass and Neill (2001).

The 13 youth development objectives consisted of 10 life skill factors, 2 mental health factors, and 1 behavioural conduct factor. Self-report survey measurement items for each of the factors were derived from pre-existing instrumentation. These items were adapted for observer surveys. More details are provided in Table 2 and the Measures section.

Table 2

#### *Youth Development Catalyst Program Objectives*

Youth Development Objective	Description
Life effectiveness (10)	
Emotional Resilience	Ability to manage emotional responses and stressful situations
Goal Setting	Ability to set/achieve goals
Healthy Risk Taking	Knowledge of difference between healthy and unhealthy risks
Locus of Control	Sense of control over one's own life
Self Awareness	Self-awareness and self-understanding
Self Esteem	Sense of personal worth and value
Self Confidence	General confidence in one's self and one's capacity
Communication Skills	Effective communication in interpersonal and group settings
Community Engagement	Meaningful engagement with community
Cooperative Teamwork	Cooperation with others to achieve group tasks
Mental Health (2)	
Psychological Distress	Extent of recent negative psychological experience
Psychological Well-being	Extent of recent positive psychological experience
Behavioural Conduct (1)	Frequency of most common adolescent delinquent behaviours.

Also of interest in this study were the program processes that at least one of the two senior Catalyst program staff members thought were very important or somewhat important to investigate:

1. Program length
2. Program difficulty
3. Participant motivation
4. Facilitation style
5. Organisation's philosophy



6. Organisation's culture
7. Profiling
8. Evaluation

### The present study

Youth prevention programs that utilise innovative and non-traditional approaches, such as adventure-based prevention programs, often do so in isolation and with limited knowledge about how to maximise their effects. A critical task for program developers, and for advancing the field as a whole, is effective use of research and evaluation (Gray & Neill, 2011).

The aim of this study was to evaluate the effects of the PCYC Bornhoffen Catalyst program on youth-at-risks' life effectiveness, mental health, and behavioural functioning. The methodology used mixed methods to help seek verification of quantitative and qualitative data from multiple perspectives (youth participants, program leaders, teachers, and significant others) to address the study aims.

Mixed methods research draws on the respective strengths and perspectives of quantitative and qualitative data (Östlund, Kidd, Wengström, & Rowa-Dewar, 2011). Each type of data provides a different representation of the world and their integration broadens the scope of perspectives that can be investigated in attempting to address the research questions (Tashakkori & Teddlie, 2003).

Both quantitative and qualitative knowledge are important for understanding the change processes in psychotherapeutic interventions (Hanson, Creswell, Clark, Petska, & Creswell, 2005). The combination of qualitative and quantitative findings produces an overall or negotiated account in which the findings are forged, which is not possible by using a singular approach (Bryman, 2007). Thus, employing both approaches enhances the integrity of findings and provides a better understanding of a research problem than might be possible with use of either methodological approach alone (Palinkas, Horwitz, Chamberlain, Hurlburt, & Landsverk, 2011).



## Method

### Participants and programs

There were 53 adolescent participants (16 females (30%); 37 males (70%)) who completed a PCYC Catalyst intervention between 2012 and 2013. Participant ages ranged from 13 and 16 years ( $M = 14$ ;  $SD = 0.68$ ).

There were six programs involved in this evaluation:

- Bracken Ridge 2013 ( $n = 9$ )
- Dalby 2013 ( $n = 10$ )
- Goondiwindi 2013 ( $n = 8$ )
- Helensvale 2013 ( $n = 9$ )
- Spinnifex 2013 (Mt Isa) ( $n = 10$ )
- Woodridge 2012 ( $n = 7$ )

In addition, there was an incomplete program which was also considered:

- Woodridge 2013

Matching short-term data was obtained from 38 participants (26 males and 12 females; Mode and Median = 14 years, Range = 13 to 15 years):

- Bracken Ridge 2013 ( $n = 7$ )
- Dalby 2013 ( $n = 5$ )
- Spinnifex 2013 ( $n = 8$ )
- Woodridge 2012 ( $n = 5$ )
- Goondiwindi 2013 ( $n = 6$ )
- Helensvale 2013 ( $n = 7$ )

Matching longer-term data was obtained from 29 participants (20 males and 9 females; Mode and Median = 14 years, Range = 13 to 15 years):

- Bracken Ridge 2013 ( $n = 6$ )
- Dalby 2013 ( $n = 4$ )
- Spinnifex 2013 ( $n = 4$ )
- Woodridge 2012 ( $n = 6$ )
- Goondiwindi 2013 ( $n = 2$ )
- Helensvale 2013 ( $n = 7$ )

The most common reason for missing longer-term data was that the participant was no longer a student at the high school.

## Materials

### Design

Quantitative data about the Catalyst participants was collected at three time points:

- Time 1 (Pre-program – collected during the Lead-in),
- Time 2 (Post-program – collected during the Follow-up), and
- Time 3 (Longer-term – collected during the following 6 to 12 months).

Ratings of youth's life skills, mental health, and behaviour were provided by youth participants using the Youth Participant Self-report Survey developed for this study and observers (PCYC facilitators and teachers/caseworkers) completed the Observer Survey. In addition, youth participants completed Time 2 program satisfaction and feedback ratings about the program and its impact.

Qualitative data was collected via semi-structured interviews with youth participants and observers (PCYC facilitators and teachers/caseworkers) towards the end of the Expedition and/or during the Follow-up. These interviews were recorded, transcribed, and summarised, with key themes identified in terms of program impacts and areas for potential improvement.

### *Life effectiveness*

Life effectiveness skills were measured by using an adapted version of the Youth at Risk Program Evaluation Tool (YARPET; Neill, 2007). This measure contained 30 items designed to measure 10 dimensions of life effectiveness (see Table 3). The life effectiveness dimensions were selected in consultation with the Catalyst program staff, to reflect the Catalyst program youth development goals.

Table 3

*Structure of the 10-factor, 30-item Version of the Life Effectiveness Questionnaire / Youth At Risk Program Evaluation Tool*

Life effectiveness dimension	Description	Example item
Emotional Resilience	Ability to manage emotional responses and handle stressful situations	I stay calm in stressful situations.
Goal Setting	Ability to set/achieve goals	I have specific goals to aim for.
Healthy Risk Taking	Knowledge of difference between healthy and unhealthy risks	I think carefully about the consequences of my risky actions.
Locus of Control	Sense of control over one's own life	My own efforts and actions are what will determine my future.
Self Awareness	Self-awareness and self-understanding.	I understand myself.
Self Esteem	Sense of personal worth and value	Overall I have a lot to be proud of.
Self Confidence	General confidence in one's self and one's capacity	When I apply myself to something I am confident I will succeed.
Communication Skills	Effective communication with other people in interpersonal and group settings	I communicate effectively with other people.
Community Engagement	Meaningful engagement with community	I enjoy living in my community.
Cooperative Teamwork	Cooperation with others to achieve group tasks	I like cooperating in a team.

An eight-point Likert scale was used, ranging from "False - Not like me" to "True - Like me" (see Figure 1).

FALSE						TRUE	
NOT LIKE ME						LIKE ME	
1	2	3	4	5	6	7	8
This statement doesn't describe me at all; it isn't like me at all				More true than false		This statement describes me very well; it is very much like me	
More false than true							

Figure 1. Eight-point Like Me Likert rating scale.

### *Mental health*

Mental health was measured by using a 2-factor, 10-item version of the General Well-Being Inventory (GWB) which was adapted from Heubeck and Neill (2000) and Veit and Ware (1983). This version asked how the participant has been feeling recently (during the last month for Time 1 and Time 3 and during the Expedition for Time 2). The instrument measures psychological distress (5 items) and psychological well-being (5 items; see Table 4). The eight-point Likert scale from “False – Not like me” to “True – Like me” used for the YARPET was also used for the GWB.

Table 4  
*Structure of the 2-factor 10-item Version of General Well-Being*

Life effectiveness dimension	Description	Example item
Psychological Distress	Extent of recent negative psychological experience, including distress, depression, and anxiety	During the past month, I have felt downhearted and blue.
Psychological Well-being	Extent of recent positive psychological experience, including uplifting mood and positive, optimistic outlook	During the past month, I felt relaxed and free of tension.

### *Adolescent Behavioural Conduct*

Adolescent behavioural conduct was measured using a short version of the Australian Self-reported Delinquency Scale (Mak, 1993). This survey contained eight items which asked participants to rate the frequency with which they had engaged in eight of the most common different types of adolescent delinquent behaviour over the past six months (see Table 5).

Table 5  
*Structure of the 8-item Version of the Adolescent Behavioural Conduct Scale*

Behaviour	Example
Cheating	on a school assignment
Drug use	drunk alcohol, used marijuana
Wagging	not attended school
Fighting	with fists or weapon with intent to threaten or harm
Vehicles	driven a car illegally or been driven illegally in a car
Stealing	stolen cash or items from someone
Harming	intentionally caused hurt or upset to others
Vandalising	illegally graffitied property

In addition, youth participants were asked an open-ended question about their recent behaviour (Describe your behavioural conduct over the past six months) and to rate whether his/her behaviour had “got a lot worse”, “got a bit worse”, remained “about the same”, “improved a bit”, or “improved a lot” over the past six months.

### *Participant outcomes and program satisfaction*

At the end of the Catalyst program (Time 2, during the Follow-up), youth participants’ perceived program outcomes and satisfaction with various aspects of the program experience was measured using a 54-item survey, the Participant Evaluation of Catalyst Program, which was based on the Participant Evaluation of Instructor and Program Quality (PEIPQ; Richards & Neill, 1994). There were 47 items about outcomes and satisfaction levels which were assessed using an eight-point False-True rating scale (see Figure 2) plus there were 7 open-ended questions. The eight question categories are described in Table 6.

1	2	3	4	5	6	7	8
Definitely False	False	Mostly False	More False than True	More True than False	Mostly True	True	Definitely True

Figure 2. Eight-point False-True rating scale

Table 6

*Participant Evaluation of Catalyst Program: Outcomes and Satisfaction Dimensions*

Dimension	Description	# of items
Personal Outcomes	Value of the program for personal growth and development, including self-confidence, self-awareness, self-esteem, self-confidence, goal setting, healthy risk-taking, locus of control, and emotional control.	11
Social Outcomes	Value of the program for developing social skills and relationships, communication skills, cooperative teamwork, and community engagement.	6
Facilitators	Satisfaction with the program facilitators, including their enthusiasm, encouragement, being able to easily talk with them, their listening, working with the group, explanations, patience, and safety.	11
Group Dynamics	How well the group worked with each other, usefulness of group discussions, cooperation and involvement of all group members.	5
Group Participation	Extent to which the participant become fully involved in the group, including comfort, acceptance, support from the group and being able to talk openly and easily within the group.	5
Program Overall	Overall excellence of the program, including the extent to which it was worth the effort, well organised, and recommended to other people.	4
Program Design	The Lead-in, Expedition, and Follow-up excellence, difficulty, and length.	9
General Comments	Open-ended questions about the best and worst aspects of Catalyst and other comments.	3

### *Observer survey*

Observers were school or community representatives. Observers were usually teachers, but also included a school chaplain and a local police officer. Up to three observers rated each program participant on the 13 youth development outcomes (10 life skills, 2 mental health dimensions, and overall behavioural conduct) on up to three occasions (Pre-program, Post-program, and Follow-up). An eight-point True-False Likert rating scale was used (see Figure 2).

### *Procedure*

Conduct of this study was approved by the University of Canberra Human Research Ethics Committee (2012-2014; #12-96).

Short-term data was collected during 2012 (Woodridge 2012) and 2013 (the rest of the programs). Long-term data collection took place February to May, 2014. This data was used to examine:

- Short-term changes (between Time 1 and 2), and
- Long-term changes (between Time 1 and 3).

### *Data analysis*

To help interpret changes in measures using rating scales at different points in time, standardised mean effect sizes were calculated. These effect sizes indicate the amount of change in standard deviation units. This is a way of expressing changes in scores over time in a standardised manner which facilitates comparison with other studies. Useful introductions to the use of effect sizes in program evaluation are provided by Coe (2000), Marzano Research Laboratory (n. d.), and Neill (2008).

Cohen (1977) provided the most widely used guideline for interpreting effect sizes, suggesting that 0.2 indicates a small change, 0.5 indicates a moderate change, and 0.8 indicates a large change. However, Cohen also recommended that effect sizes should be interpreted in the context of other research findings about the subject of interest, such as those reported in the Hattie et al. (1997) adventure education meta-analysis and in the Bowen and Neill (2013) meta-analysis of therapeutic adventure programs, as described in the section in the introduction section about benchmarks for adventure-based interventions. Based on these studies, the following ratings of effect sizes for adventure-based interventions for youth are suggested:

- Very small positive change (~0.1),
- Small positive change (~0.2)
- Small to moderate positive change (~0.3)
- Moderate positive change (~0.5)
- Strong positive change (~0.6+)

Effect sizes can also usefully be interpreted as *z*-scores which expresses the amount of change using the properties of a normal distribution. For example, an effect size of 0.2 is equivalent to an average participant (who would sit on the 50<sup>th</sup> percentile) moving to the 58<sup>th</sup> percentile for the outcome of interest. An effect size of 0.4 would be equivalent to a participant moving to the 66<sup>th</sup> percentile. In other words, for an effect size of 0.2, 58% of participants who receive treatment are likely to be better off, whilst an effect size of .4 means that 66% of participants who receive treatment are likely to be better off.

In the current study, standardised mean effect sizes were calculated based on the differences between the means divided by the estimated population standard deviation. The population standard deviation estimates were based on the Time 1 ( $N = 56$ ) standard deviations which are shown in Appendix A.



## Results

### Youth participant self-evaluations

Thirty-eight out of the 53 PCYC Catalyst youth participants from six schools completed matching Time 1 (Pre-program) and Time 2 (Post-program) surveys about their life effectiveness and mental health. Table 7 provides descriptive statistics and effect sizes for short-term changes with comparative benchmarks from Bowen and Neill's (2013) meta-analysis of adventure therapy programs.

Twenty-nine participants from five schools provided complete matching Time 1 (Pre-program) and Time 3 (Long-term) responses about life effectiveness, mental health, and overall behavioural conduct. Table 8 provides descriptive statistics and effect sizes for PCYC Catalyst youth participants' long-term changes along with comparative benchmarks from Bowen and Neill's (2013) meta-analysis of adventure therapy programs.

Table 9 presents a summary of these findings and the comparison between the Catalyst program short-term and longer-term self-reported outcomes and the comparative benchmarks. In general, the Catalyst program outcomes were lower than for the comparative benchmarks, but it is important to also note that:

1. Catalyst program self-reported outcomes were, by and large, indicative of positive changes
2. Catalyst program self-reported longer-term outcomes were more positive than the short-term outcomes
3. Several Catalyst program longer-term outcomes were higher than the comparative benchmarks
4. None of these differences were statistically significant (i.e.,  $p > 0.05$ )

### *Life effectiveness skills*

The average short-term (Time 1 to 2) effect size for life effectiveness was small and positive ( $ES = .16$ ,  $N = 38$ ). The short-term effect sizes for the 10 dimensions of life effectiveness were all positive (see Table 7) and ranged between .02 (Self-Awareness) and .31 (Communication Skills). The average short-term effect size of .16 is akin to 56% of participants in Catalyst programs exceeding the life skills of an equivalent group who don't participate. Examination of effect sizes for individual participants indicated that 40% reported lower overall life effectiveness at the end of the program and 60% reported higher life effectiveness.

The average longer-term (Time 1 to 3) effect size was small to moderate and positive ( $ES = .30$ ,  $N = 29$ ) and slightly larger than the short-term effect size. Long-term improvements were reported, on average, for all 10 dimensions of life effectiveness. These long-term improvements included moderate to strong change in Communication Skills ( $ES = 0.73$ ), moderate change in Healthy Risk-Taking (0.50), Self-Esteem (0.45), and Self-Confidence (0.45), small to moderate change for Cooperative Teamwork (0.32) and Emotional Resilience (0.26), small change for Self-Awareness (0.13) and Locus of Control (0.11), and very small change for Community Engagement (0.04) and Goal Setting (0.04). Overall, an average long-term effect size of .30 is akin to 62% of participants in Catalyst programs exceeding the life skills of an equivalent group who don't participate. Examination of overall life effectiveness effect sizes for individual participants indicated that 38% reported lower effectiveness and 62% reported higher life effectiveness in the longer-term.

### *Mental health*

The short-term changes for the two measured dimensions of mental health differed (see Table 7;  $N = 36$ ). Youth participants reported a small to moderate heightening of Psychological Distress ( $ES = -0.34$ , a 15% change) during the Expedition and a very small improvement in Psychological Well-being ( $ES = 0.08$ , a 4% change). When these two aspects of mental health were combined, there was an average short-term effect size of -0.12 which is akin to 45% of participants in Catalyst programs exceeding the mental health of an equivalent group who don't participate. Examination of effect sizes for individual participants indicated that 65% reported lower overall mental health during the Expedition and 35% reported higher mental health.

The long-term effects (see Table 8;  $N = 28$ ) indicated a very small negative change in Psychological Distress ( $ES = -0.10$ , a 5% change) and a large improvement in Psychological Well-being ( $ES = 0.80$ , a 28% improvement), with an overall average effect size for mental health of 0.35 which is akin to 64% of participants in Catalyst programs exceeding the mental health of an equivalent group who don't participate. Examination of effect sizes for individual participants indicated that 29% reported lower overall mental health and 79% reported higher mental health in the longer-term.

### *Adolescent behavioural conduct*

Adolescent behavioural conduct was assessed at Time 1 (Pre) ( $N = 52$ ) and Time 3 (Long-term) ( $N = 28$ ). At Time 1, there was an average of 12.5 self-reported behavioural conduct issues over the previous six months (~2 incidents per month). The most commonly reported behavioural conduct issues were Harming ( $M = 2.41$ ), Fighting (2.26), and Wagging ( $M = 2.22$ ) which were reported as occurring, on average, more than twice over the previous six months. These behaviours were followed in frequency of occurrence by Cheating ( $M = 1.33$ ), Drug use ( $M = 1.19$ ), Vehicles ( $M = 1.11$ ), Stealing ( $M = 1.04$ ), and Vandalising ( $M = 0.93$ ), which participants reported engaging in, on average, once over the previous six months. This represented a collective total of 337 self-reported behavioural incidents by the 27 participants in the previous six months.

Follow-up assessments were conducted 6 to 18 months after the Catalyst program completion. For the six month period prior to the Follow-up assessment, participants reported fewer behavioural conduct incidents (average of 10.7 incidents per month (compared to 12.5 at Time 1); an overall reduction of 49 incidents per six months). There were substantial reductions in the reported frequency of Harming ( $ES = -0.65$ ), Fighting (-0.46), Stealing (-0.34), Vandalising (-0.41), small increases in Cheating (0.18), Vehicles (0.14), and Wagging (0.04), and a small to moderate increase in the self-reported frequency of one behaviour (Drug Use; 0.41).

The overall adolescent behavioural conduct effect size was -0.12 which is akin to 55% of participants in Catalyst programs having reduced behaviour conduct problems compared to an equivalent group who didn't participate. Examination of effect sizes for individual participants indicated that 29% of participants reported more behavioural conduct problems and 71% reported fewer behavioural conduct problems in the longer-term.

When asked at Time 3 (Follow-up), 58% of the 28 respondents indicated that their behaviour had improved (11% of participants indicated that their behaviour had "improved a lot" and 47% indicated that their behaviour had "improved a bit"), 21% indicated that their behaviour was "about the same", and 13% indicated that their behaviour "got a lot worse".

When asked at Time 3 (Follow-up) to comment in their own words about their behaviour over the previous six months, 19 participants responded. Fourteen participants (75%) reported positive outcomes:

1. In the past 6 months I have gotten everything together. I'm proud of my achievements.
2. Well over the past 6 months I have been doing very well, I have learnt to control myself and be more self confident. I have been staying out of trouble 90% of the time.
3. I think my behaviour has improved a lot as I'm not getting in trouble in school or at home anymore. I'm doing very well with most things I'm doing.
4. It has been alright. Got a lot better.
5. Gotten happier and better with my attitude.
6. Its been fine and fun.
7. Happy and fun.
8. Brilliant.
9. Pretty good except obviously all the things numbered above.
10. Yeah I think that I have been acting good.
11. More good than bad.
12. Really good
13. Excellent because I'm an excellent student
14. Decent



Three participants (21%) indicated no particular improvement or worsening of behaviour:

1. Sometimes I was bad, sometimes I was good, but overall I was okay.
2. Yeah nah yeah nah yeah nah good.
3. My behaviour has been bad then good but I feel fine now.

Two participants (14%) indicated poor or worse behaviour:

1. My behaviour has been okay but not the best. To be honest I got worse after camp. It taught me I got rewarded for bad behaviour.
2. hahaha shit, hit someone and harmed myself, good one!! But I got better friends?

Table 7  
 Short-term Changes in Youth Participant Self-reported Life Effectiveness Skills and Mental Health Factors (N = 36)

Constructs	Lead-in (Pre) - Time 1		Follow-up (Post) - Time 2		Short-term Catalyst Confidence Interval			Short-term Benchmark Confidence Interval			Benchmark Category
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>ST</i> <sub>ES</sub>	<i>ST</i> <sub>.025</sub>	<i>ST</i> <sub>.975</sub>	<i>ST</i> <i>BM</i> <sub>ES</sub>	<i>ST</i> <i>BM</i> <sub>.025</sub>	<i>ST</i> <i>BM</i> <sub>.975</sub>	
Life effectiveness skills											
Emotional Resilience	5.22	1.53	5.42	1.17	0.12	-0.38	0.62	0.46	0.37	0.54	Clinical
Goal Setting	6.22	1.63	6.39	1.48	0.11	-0.43	0.64	0.46	0.37	0.54	Clinical
Healthy Risk Taking	5.24	1.60	5.37	1.51	0.09	-0.44	0.61	0.46	0.37	0.54	Clinical
Locus of Control	6.02	1.58	6.30	1.17	0.19	-0.33	0.70	0.41	0.34	0.47	Self-Concept
Self-Awareness	6.38	1.45	6.41	1.45	0.02	-0.45	0.50	0.41	0.32	0.49	Social Development
Self-Esteem	5.37	1.41	5.77	1.25	0.29	-0.17	0.75	0.39	0.29	0.50	Behaviour
Self-Confidence	5.65	1.55	5.85	1.33	0.13	-0.38	0.64	0.41	0.34	0.47	Self-Concept
Communication Skills	5.48	1.26	5.85	1.14	0.30	-0.11	0.71	0.41	0.34	0.47	Self-Concept
Community Engagement	5.55	1.59	5.85	1.33	0.19	-0.32	0.71	0.41	0.32	0.49	Social Development
Cooperative Teamwork	5.50	1.53	5.83	1.49	0.21	-0.29	0.71	0.41	0.32	0.49	Social Development
Overall	5.53		5.84		0.16	-0.33	0.66				
Mental health											
Psychological Distress	5.38	1.82	4.82	1.50	-0.31	-0.90	0.29	0.46	0.37	0.54	Clinical
Psychological Well-Being	5.47	1.71	5.60	1.73	0.07	-0.48	0.63	0.46	0.37	0.54	Clinical
Overall	5.43		5.21		-0.12	-0.69	0.46				

Note. *M* = Mean; *SD* = Standard Deviation; *ST* = Short-Term; *ES* = Standardised Mean Effect Size; *CI* = Confidence Interval; *BM* = Benchmark (10-17 year old age-based benchmark; obtained from <http://www.danielbowen.com.au/meta-analysis>). An increase over time signifies improvement.

Table 8  
*Longer-term Changes in Youth Participant Self-reported Life Effectiveness Skills (N = 29), Mental Health (N = 28) and Behavioural Conduct Factors (N = 27)*

Constructs	Lead-in (Pre) - Time 1		Long-term - Time 3		Long-term Catalyst Confidence Interval			Long-term Benchmark Confidence Interval			Benchmark Category
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	LT <sub>ES</sub>	LT <sub>.025</sub>	LT <sub>.975</sub>	LT BM <sub>ES</sub>	LT BM <sub>.025</sub>	LT BM <sub>.975</sub>	
<b>Life effectiveness skills</b>											
Emotional Resilience	4.81	1.66	5.24	1.58	0.25	-0.35	0.86	0.49	0.40	0.57	Clinical
Goal Setting	5.85	1.69	5.91	1.95	0.04	-0.58	0.65	0.49	0.40	0.57	Clinical
Healthy Risk Taking	4.56	1.50	5.31	1.34	0.50	-0.05	1.05	0.49	0.40	0.57	Clinical
Locus of Control	5.80	1.74	5.97	1.40	0.11	-0.52	0.75	0.44	0.37	0.50	Self-Concept
Self-Awareness	6.20	1.56	6.37	1.40	0.13	-0.44	0.69	0.44	0.35	0.52	Social Development
Self-Esteem	4.93	1.41	5.55	1.32	0.45	-0.07	0.96	0.42	0.32	0.53	Behaviour
Self-Confidence	5.25	1.69	5.94	1.27	0.45	-0.17	1.06	0.44	0.37	0.50	Self-Concept
Communication Skills	5.02	1.35	5.92	1.02	0.73	0.23	1.22	0.44	0.37	0.50	Self-Concept
Community Engagement	5.56	1.68	5.60	1.34	0.04	-0.59	0.64	0.44	0.35	0.52	Social Development
Cooperative Teamwork	5.41	1.56	5.90	1.30	0.32	-0.25	0.88	0.44	0.35	0.52	Social Development
Overall	5.34		5.77		0.30	-0.28	0.88	0.45	0.37	0.53	
<b>Mental health</b>											
Psychological Distress	5.47	1.76	5.29	1.83	-0.10	-0.75	0.55	0.49	0.40	0.57	Clinical
Psychological Well-Being	4.55	1.53	5.96	1.33	0.80	0.23	1.37	0.49	0.40	0.57	Clinical
Overall	5.01		5.63		0.35	-0.26	0.96	0.49	0.40	0.57	
<b>Behavioural Conduct</b>											
Cheating	1.33	1.33	1.63	1.64	0.18	-0.48	0.87	-0.50	-0.41	-0.59	Behaviour
Drug use	1.19	1.82	1.96	2.10	0.41	-0.36	1.50	-0.50	-0.41	-0.59	Behaviour
Wagging	2.22	2.00	2.30	2.38	0.04	-1.27	0.73	-0.50	-0.41	-0.59	Behaviour
Fighting	2.26	1.81	1.45	1.45	-0.46	-1.41	0.25	-0.50	-0.41	-0.59	Behaviour
Vehicles	1.11	1.99	2.14	1.41	0.14	-0.95	1.16	-0.50	-0.41	-0.59	Behaviour
Stealing	1.04	1.95	0.44	1.31	-0.34	-1.50	0.61	-0.50	-0.41	-0.59	Behaviour
Harming	2.41	2.19	1.04	1.56	-0.65	-1.67	0.46	-0.50	-0.41	-0.59	Behaviour
Vandalising	0.93	1.57	0.52	1.31	-0.25	-1.20	0.47	-0.50	-0.41	-0.59	Behaviour
Overall	1.56		1.33		-0.12						

*Note.* *M* = Mean; *SD* = Standard Deviation; LT = Long-Term; ES = Standardised Mean Effect Size; CI = Confidence Interval; BM = Benchmark (10-17 year old age-based benchmark; based on <http://www.danielbowen.com.au/meta-analysis> – as the overall Post-program to Follow-up effect size was 0.03, this has been added to the Short-Term benchmarks). An increase over time signifies improvement except for Behavioural Conduct.

Table 9

*Summary of Effect Size Comparison Between Catalyst Program Outcomes and Meta-analytic Benchmarks for Self-reported Life Effectiveness Skills, Mental Health and Behavioural Conduct*

Constructs	Short-term (N = 36)			Long-term (N = 29)		
	Catalyst	< >	Benchmark	Catalyst	< >	Benchmark
Life effectiveness skills						
Emotional Resilience	0.12	<	0.46	0.25	<	0.49
Goal Setting	0.11	<	0.46	0.04	<	0.49
Healthy Risk Taking	0.09	<	0.46	<b>0.50</b>	>	<b>0.49</b>
Locus of Control	0.19	<	0.41	0.11	<	0.44
Self-Awareness	0.02	<	0.41	0.13	<	0.44
Self-Esteem	0.29	<	0.39	<b>0.45</b>	>	<b>0.42</b>
Self-Confidence	0.13	<	0.41	<b>0.45</b>	>	<b>0.44</b>
Communication Skills	0.30	<	0.41	<b>0.73</b>	>	<b>0.44</b>
Community Engagement	0.19	<	0.41	0.04	<	0.44
Cooperative Teamwork	0.21	<	0.41	0.32	<	0.44
Mental health						
Psychological Distress	-0.31	<	0.46	-0.10	<	0.49
Psychological Well-Being	0.07	<	0.46	0.80	>	0.49
Behavioural Conduct						
Cheating				0.18	<	-0.50
Drug use				0.41	<	-0.50
Wagging				0.04	<	-0.50
Fighting				-0.46	<	-0.50
Vehicles				0.14	<	-0.50
Stealing				-0.34	<	-0.50
Harming				<b>-0.65</b>	>	<b>-0.50</b>
Vandalising				-0.25	<	-0.50

*Note.* Bold items indicate scales for which the Catalyst program had a higher effect size than the benchmark; none of these differences are statistically significant, but may be indicative. LT = Long-Term; ES = Standardised Mean Effect Size; BM = Benchmark (10-17 year old age-based benchmark; based on <http://www.danielbowen.com.au/meta-analysis> – as the overall Post-program to Follow-up effect size was 0.03, this has been added to the Short-Term benchmarks). An increase over time signifies improvement except for Behavioural Conduct.

## Observer ratings of youth participants

### Short-term

Matching Time 1 and Time 2 observer ratings were used to analyse short-term change in the 13 youth development objectives ( $N = 39$  from 6 schools; see Table 10). Observers typically rated youth participants lower (between 4 and 5 out of 8) than the youth participants rated themselves (between 5 and 6 out of 8). Observer ratings indicated positive changes, on average, in all 13 youth development outcomes. Observer ratings indicated moderately strong positive short-term change in life effectiveness ( $ES = 0.60$ , a 29% change) and mental health (0.46, a 22% change) and large improvements in behaviour (0.76, a 35% change).

More specifically, observer ratings for life effectiveness indicated strong short-term improvements in Healthy Risk-taking (0.91) and Self-Esteem (0.79), moderate to strong positive changes in Self Confidence (0.65), Locus of Control (.63), Emotional Resilience (0.61), Community Engagement (0.58), Goal Setting (0.56), and Communication Skills (0.53), and small to moderate positive effects for Effective Problem Solving (0.43) and Cooperative Teamwork (0.34). For mental health, observer ratings indicated strong positive improvements in Psychological Well-being (0.80) and very small positive improvements in Psychological Distress ( $ES = 0.12$ ) during the Expedition.

### Longer-term

Matching Time 1 and Time 3 observer ratings were used to analyse long-term change in the 13 youth development objectives ( $N = 23$  from 4 schools; see Table 11). On average, there were positive long-term changes for 11 out of the 13 outcomes (all except Effective Problem Solving and Psychological Distress). Observer ratings indicated small, positive long-term change for life effectiveness (0.24, a 12% change), small negative long-term change for mental health (-0.14, a 7% change) and a small to moderate improvement for behavioural conduct (0.27, a 13% change).

More specifically, for life effectiveness, observer ratings indicated moderate positive effects for Cooperative Teamwork (0.48), Communication Skills (0.43), Emotional Resilience (0.40) and Self-Confidence (0.40), small positive changes for Community Engagement (0.31), Goal Setting (0.23), Healthy Risk-taking (0.18) and Locus of Control (0.15), little to no change for Self Esteem (0.05), and small to moderate negative outcomes for Effective Problem Solving (-0.23). For mental health, observers saw no change in Psychological Well-being (0.00) and a small negative change in Psychological Distress (-0.29).



Table 10

*Short-term Changes in Observer Ratings of Youth Participant Outcomes (N = 39)*

	Time 1 (Pre)		Time 2 (Post)		Change ES
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Youth Development Objective					
Life effectiveness skills					
Self Esteem	4.89	1.17	5.78	1.12	0.79
Self Confidence	4.85	1.20	5.59	1.12	0.65
Locus of Control	4.69	1.31	5.45	1.13	0.63
Effective Problem Solving	4.86	1.27	5.40	1.26	0.43
Goal Setting	4.69	1.18	5.28	0.94	0.56
Healthy Risk-taking	4.76	1.12	5.73	1.02	0.91
Emotional Resilience	4.49	1.38	5.26	1.18	0.61
Communication Skills	4.46	1.29	5.10	1.15	0.53
Cooperative Teamwork	5.15	1.10	5.57	1.36	0.34
Community Engagement	4.79	1.40	5.53	1.17	0.58
Overall					0.60
Mental health					
Psychological Well-being	5.29	1.16	6.19	1.13	0.80
Psychological Distress	4.34	1.26	4.50	1.46	0.12
Overall					0.46
Behaviour					
Adolescent Behavioural Conduct	3.90	1.43	5.04	1.63	0.75

*Note.* All dimensions are scored in the positive direction, so that higher scores represent more desirable outcomes.

Table 11  
*Longer-term Changes in Observer Ratings of Youth Participant Outcomes (N = 23)*

	Time 1 (Pre)		Time 3 (Follow-up)		Change ES
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Youth Development Objective					
Life effectiveness skills					
Self Esteem	5.35	1.61	5.43	1.47	0.05
Self Confidence	4.83	1.78	5.48	1.50	0.40
Locus of Control	5.00	2.20	5.26	1.18	0.15
Effective Problem Solving	5.52	1.89	5.13	1.60	-0.23
Goal Setting	4.91	1.95	5.30	1.42	0.23
Healthy Risk-taking	5.04	1.82	5.35	1.61	0.18
Emotional Resilience	4.43	2.37	5.22	1.65	0.40
Communication Skills	4.26	2.09	5.04	1.58	0.43
Cooperative Teamwork	5.04	2.12	5.91	1.56	0.48
Community Engagement	4.52	2.33	5.09	1.24	0.31
Overall					0.24
Mental health					
Psychological Well-being	5.52	1.93	5.52	1.62	0.00
Psychological Distress	5.17	1.47	4.70	1.84	-0.29
Overall					-0.14
Behaviour					
Adolescent Behavioural Conduct	4.04	2.03	4.57	1.97	0.27

*Note.* All dimensions are scored in the positive direction, so that higher scores represent more desirable outcomes.

#### Youth participant outcomes and satisfaction with program

Program evaluation data was obtained from approximately half of the participants (26 out of 53). Overall results for each of the survey items are provided in Table 12. These results are summarised along with participants' open-ended comments in the following sections.

### *Personal outcomes*

The results indicated that participants felt it was “Mostly True” ( $M = 6.21 / 8$ ) that they had improved in their personal skills as a result of the program. When asked what the main thing they had learnt about themselves, participants responded:

1. I learnt that I can go great distances (and weeks) without the xbox.
2. That when I put my mind to things I can do it.
3. That violence doesn't solve everything and to be a good leader.
4. That I can do anything no matter how hard it is.
5. That if I set my mind to things I can do it!
6. Goals.
7. To believe in yourself, never give up & no matter how hard it is give it a go.
8. Get it done and respect everyone.
9. Get it done.
10. To learn new things and to do it and get it done.
11. I can do better things.
12. I learnt that I have more control over myself and I am talking to my mum with more respect.
13. I learnt that I can carry a lot of weight on my back.
14. I'm a stronger person :)
15. I can push myself.
16. Confidence is key.
17. I can do anything.
18. That I'm braver than I thought I was.
19. That I can work with other people.

### *Social outcomes*

Participants reported that it was “Mostly True” ( $M = 5.85 / 8$ ) that the program had improved their social skills. When asked about the main thing that had been learnt about working with others, participants responded:

1. No matter who they are you can always trust them.
2. That I have to listen to others not just do everything my way or how I want to.
3. That everyone is different.
4. That everyone can get along if you respect one another.
5. That it takes patience and you can't always get what YOU want - it has to also benefit the team.
6. Teamwork.
7. Never put people down & encourage them.
8. If everyone uses team work we will get it done.
9. I don't know.
10. To keep giving our best.
11. That I can trust them more and talk to people more nicely.
12. It is healthier to work with others to get it done faster.
13. To listen to everyone's opinion.
14. Not to be bossy.
15. Don't argue.
16. Communication.
17. Team work.
18. It can be hard.
19. Its easy to get things done.
20. It's not easy.



### *Facilitators*

Overall, facilitators were rated quite positively ( $M = 6.38 / 8$ ), with participants indicating that it was “Mostly true” that facilitators were excellent. Facilitators were rated highest for the levels of safety they taught and maintained (6.87), followed by their enthusiasm (6.58) and encouragement of participants to achieve for themselves (6.52). The lowest rating was for the perceived fairness of their actions (6.13). The 10 additional comments about the facilitators were very positive:

1. They were great leaders.
2. They were a really good help, and easy to talk to.
3. They were really positive and were really easy to get along with.
4. They were amazing and did a great job.
5. They were really helpful when you needed to talk and they explained stuff so it was easy to understand.
6. They were good.
7. They were really nice and very respectful.
8. Always there for us.
9. Awesome!!!
10. They were good people.

### *Group Dynamics*

Participants rated how well the grouped worked together as 5.50 (half-way between 5 “More True than False” and 6 “Mostly True”). Half of the additional eight comments described groups that worked well together, the other half of the comments indicated that were notable problems with the group paying attention, participating, and working together:

1. We had a good, trustworthy group.
2. We did alright considering we didn't really know one another.
3. They worked good.
4. The group was very good and respectful but sometimes we didn't work out as a team.
5. The group didn't work together until the end of the program.
6. Some people didn't participate as much as others.
7. Formation of cliques didn't help.
8. Some wasn't listening.

### *Group Participation*

Participants felt that it was “mostly true” ( $M = 5.78$ ) that they became fully involved in the group and participated throughout the program. When asked about their personal participation in the group, about half of the participants indicated that they were engaged with the group while the other half indicated awareness of their lack of group involvement:

1. I gave everything a go and tried to do all that I had to do.
2. Everyone helped get everyone involved.
3. I tried :)
4. It was good.
5. Encouraged others.
6. That if I wanted to be listened to they would listen.
7. I think I could have done better
8. I probably could have made more of an effort in the 9 day Expedition, but I still think I did alright.
9. Yes sometimes I really didn't want to participate in the group.
10. The group never let each other talk.

### *Program Overall*

Overall, participants rated the quality of the program very highly ( $M = 6.66$ ). Participants indicated that it was between “Mostly True” and “True” that the program was excellent, worth the effort, well organised, and recommended for others like themselves. Comments about the program overall were not sought.

### Program Design

Participants rated the program design quality separately for the Lead-in ( $M = 6.58$ ), Expedition ( $M = 6.47$ ) and Follow-up ( $M = 6.47$ ). These ratings were largely consistent with the overall program quality rating which suggests reasonable consistency in quality for each component, although perhaps the Follow-up could be improved.

Program difficulty was also rated by participants. A mid-scale rating (4.5) would indicate that the program wasn't too easy or too difficult (i.e., "just right"). Lower scores would indicate that the program was perceived as too easy and higher scores would indicate that the program was perceived as too hard. Participant ratings indicated that the Lead-in was about right (4.71), the Expedition was too hard (5.53), and the Follow-up was too easy (3.79).

Finally, program length was rated by participants. A mid-scale rating (4.5) would indicate that participants thought the length wasn't too short or too long (i.e., "just right"). Lower scores would indicate that the program was too short and higher scores would indicate that it was too long. Participant ratings indicated that the Lead-in was about right (4.68), the Expedition was too long (5.89), and the Follow-up was too short (3.89).

Table 12

#### *Descriptive Statistics for Youth Participants' Evaluation of Catalyst Program Outcomes and Program Quality*

Youth Participant Evaluation of Catalyst Program Outcomes	<i>M</i>	<i>SD</i>	<i>N</i>
<b>Personal Outcomes</b>	6.21	1.32	22
Overall, the program was valuable for my personal growth and development.	6.14	1.61	22
As a result of the program, I have more confidence in my self.	6.32	1.64	22
As a result of the program, I have improved how well I understand my self.	6.32	1.84	22
As a result of the program, I feel that I am a more worthwhile person.	5.95	1.70	22
As a result of the program, my ability to set and achieve goals has improved.	6.45	1.77	22
As a result of the program, I make better choices about taking healthy risks rather than unhealthy risks.	6.18	1.56	22
As a result of the program, I have greater control over my life.	6.36	1.56	22
As a result of the program, I am better at managing my emotional responses in stressful situations.	5.68	1.64	22
As a result of the program, I have been experiencing more positive emotion.	6.09	1.57	22
As a result of the program, I have been experiencing less negative emotion.	6.09	1.23	22
<b>Social Outcomes</b>	5.85	1.45	25
Overall, the program improved my social skills and relationships with others.	6.04	1.81	25
As a result of the program, I communicate better with other people.	6.00	1.26	25
As a result of the program, I am better at working in team situations.	5.80	1.71	25
As a result of the program, I am more involved in my community.	5.68	1.57	25
As a result of the program, my behavioural conduct has improved.	5.96	1.99	25

Youth Participant Evaluation of Catalyst Program Outcomes	<i>M</i>	<i>SD</i>	<i>N</i>
Facilitators	6.38	1.33	23
Overall, the facilitators were excellent.	6.17	1.59	23
The facilitators were enthusiastic about the program.	6.57	1.59	23
The facilitators encouraged participants to achieve things for themselves.	6.52	1.65	23
I could talk openly and easily with the facilitators.	6.22	1.59	23
The facilitators listened well and were good counselors / mentors.	6.43	1.62	23
The facilitators' actions and decisions were fair.	6.13	1.58	23
The facilitators worked well with the group.	6.30	1.43	23
The facilitators gave information and explanations in a clear and understandable way.	6.39	1.34	23
The facilitators were patient with participants if they had any difficulties.	6.48	1.56	23
The facilitators taught and maintained high levels of safety.	6.87	1.42	23
Group Dynamics	5.50	1.49	26
Overall, group members worked well with each other.	5.08	2.08	26
Group discussions were useful and productive.	6.04	1.59	26
Group members cooperated and shared responsibilities like cooking and cleaning very well with each other during the program.	5.46	1.73	26
Group members were always fully involved in the program.	5.42	1.53	26
Group Participation	5.78	1.62	26
Overall, I became fully involved in the group and contributed well throughout the program.	5.92	1.72	26
I felt comfortable and accepted within the group.	6.00	1.70	26
I got a lot of help, support, and encouragement from the group.	5.77	1.66	26
I could talk openly and easily within the group.	5.42	1.81	26
Program Overall	6.66	1.55	24
Overall, the program was excellent.	6.83	1.37	24
Overall, the program was worth the effort.	6.88	1.54	24
Overall, the program was well organised (e.g., information received, arrangement of activities, logistics, transport, equipment).	6.71	1.49	24
I would recommend the Catalyst program to other people like me.	7.00	1.32	24
Program Design			
The Lead-in was: POOR 1 2 3 4 5 6 7 8 EXCELLENT	6.58	1.54	19
The Lead-in was: TOO EASY 1 2 3 4 5 6 7 8 TOO HARD	4.74	1.41	19
The Lead-in was: TOO SHORT 1 2 3 4 5 6 7 8 TOO LONG	4.68	1.95	19
The Expedition was: POOR 1 2 3 4 5 6 7 8 EXCELLENT	6.47	1.61	19
The Expedition was: TOO EASY 1 2 3 4 5 6 7 8 TOO HARD	5.53	1.65	19
The Expedition was: TOO SHORT 1 2 3 4 5 6 7 8 TOO LONG	5.89	1.63	19
The Follow-up was: POOR 1 2 3 4 5 6 7 8 EXCELLENT	6.21	1.69	19
The Follow-up was: TOO EASY 1 2 3 4 5 6 7 8 TOO HARD	3.79	1.81	19
The Follow-up was: TOO SHORT 1 2 3 4 5 6 7 8 TOO LONG	3.89	2.13	19

## Youth participant interviews

Semi-structured interviews were conducted with 14 youth participants from two Catalyst programs (Helensvale 2013 and Spinnifex (Mt Isa) 2013). The interviews were conducted towards the end of the Expedition and aimed to capture youths' backgrounds, how they came to be involved in Catalyst, their experiences of the Lead-in and Expedition, including highlights and lowlights, outcomes, and recommendations. Audio of the interviews were digitally recorded and transcribed. Case summaries of each interview were then prepared (see Appendix B) and then mini-case summaries were developed (see Table 13).

Together these case summaries paint a picture of youths who typically experienced one or more risk factors, most commonly family problems, social problems with peers, behavioural conduct problems at school, and psychological issues including depression. The youths were typically encouraged to attend by a school teacher. Several students commented that the program wasn't fully explained to them beforehand, particularly the amount of hiking involved. The Lead-in experience provided a valuable chance to get to know the group and facilitators, become familiar with camping and cooking skills, try some adventure activities, and play fun games. The youth participants looked forward to the Expedition although they found it to be harder than they had expected (particularly hiking uphill with heavy packs). The youth participants also found that their capacity for teamwork was challenged. Often there was group conflict during the Expedition which eventually improved and appeared to serve as a catalyst for significant personal change (particularly in thinking more positively, believing in oneself, and perseverance) and social change (improved communication skills, greater tolerance and respecting of others, and new and improved friendships). By the end of the Expedition, the youths looked forward more positively to their futures, felt better about themselves, felt more resilient and courageous, and appeared to genuinely believe that their lives at home and school would be improved.



Table 13  
*Mini-Case Summaries of Interviews with Youth Participants in Catalyst Programs (N = 14)*

ID	Age, Gender (School)	Summary of interview	Quotes that capture the essence of the participants' experience
1	14 yo female	<p><b>Background:</b> Difficult family life due to fights at home. Finding school hard. Didn't have many friends. Keen when offered Catalyst by teacher; supported by parents. Didn't know other participants. <b>Lead-in:</b> Nervous, but enjoyed the experience. <b>Expedition:</b> Homesick first few days; made tougher by group conflict which was eventually resolved through leader intervention, but could have been addressed earlier. Looking forward to Follow-up. <b>Highlights:</b> "Everything", especially raft-building, abseil, finishing the Expedition without wanting to go home. <b>Lowlights:</b> Upset over group member conflict and being told by others to shut up. <b>Outcomes:</b> Improved relationships with others by talking with and respecting them. This change was also evident at home, with an improved relationship with her mother after the Lead-in. More motivated about school and completing assignments. She made friends with other program participants and hoped to continue these back at school. <b>Recommendations:</b> Too much hiking and the hills were too steep.</p>	<p>"I was bit nervous at the start because I didn't know anyone. I don't really talk to much people around school. I don't have that much friends really. [But] since I've come here it's like I've become close with some of them - boys and girls. So I've made more friends."</p> <p>"I hope I can do this again sometime. I like everything outdoor - adventure sort of activity stuff - the high-ropes and flying fox."</p> <p>"It was just fun!"</p>

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2	Year 9 male	<p><b>Background:</b> Lived with Mum, Step-Dad, and 4 siblings. School going alright. Physically active (played footy and sometimes went to the gym). Teacher explained Catalyst to his class. He wasn't sure (scared of doing some activities e.g., abseiling and hiking), but asked his Mum and she was encouraging. <b>Lead-in:</b> 1<sup>st</sup> day was hard, but it got better from 2<sup>nd</sup> day onward.</p> <p><b>Expedition:</b> A bit hard at the start, but it got easier. He knew most of the participants and thought the group went alright and improved but they could have done a bit better, particularly in communicating and helping each other out. <b>Highlights:</b> Raft-building testing it on the water (even though it fell apart). Abseiling. Caving. Staff members – available and helpful whenever participants were in need. <b>Lowlights:</b> Hiking and sleeping at night. <b>Outcomes:</b> Taking a lot away. Learned to speak up and listen to others' opinions (wasn't doing much of before) and how to work in a team. Now believes that you can do pretty much whatever you want as long as you set your mind to it. In the end, hiking wasn't as hard as he thought – now he can do more, take on more. Well worth his time and he would do it (or something similar) again if given the chance.</p> <p><b>Recommendations:</b> Less hiking and more fun activities such as caving, rock climbing, abseiling, and water activities like raft-building.</p>	<p>“I didn't know if I wanted to go or not because some of the things she [a school teacher] told me [on describing the Catalyst program], I was scared of doing.”</p> <p>“It was a bit hard at the start and it started getting easier and easier as we went.”</p> <p>“You can do pretty much whatever you want as long as you set your mind to it.”</p>

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3	14 yo male	<p><b>Background:</b> Moved from another country to Australia with parents and brothers. Parents worked a lot and he lived in a remote area. Home life boring – played a lot on his phone. Attended school, found it alright, and didn't get into much trouble. A teacher suggested the program and he thought abseiling and camping sounded cool, but was annoyed that the teacher didn't inform him about the amount of hiking involved. Knew about half of the Catalyst participants. <b>Expedition:</b> Found Catalyst fun, but hiking dampened that fun. Hiking was the hardest thing he'd ever done in his life (he didn't feel fit enough and found it difficult to carry the weight). Second day was the hardest due to hiking up hill. But it got easier as he went along, with the last two days being much easier to get through. Got along well with other group members, except for one boy (they hated each other the whole time and had a clash of personalities, exacerbated by initially sharing a tent together). This relationship improved towards the end of the program. <b>Highlights:</b> Flying fox, river rafting, facilitators. <b>Lowlights:</b> Rated program 7/10 (-3 due to the hiking). <b>Outcomes:</b> Might change a bit when he returned home, but felt that no-one would notice. He would like to help more around the house and said he would not annoy teachers as much at school. He looked forward to the future.</p> <p><b>Recommendations:</b> Cut out hiking and use van transportation. Pack less and do a clothes/gear swap during the hike. Get rid of "theory stuff" (reflective self-development activities) - said he didn't participate in it and found it difficult to focus on that sort of thing.</p>	<p>"She just said abseiling and camping - [I thought that] was pretty cool. She never said anything about hiking."</p> <p>"I just didn't like the hiking. [It was] the hardest thing I've done in my life."</p> <p>"I might change a little bit - I don't know. Try and do work around the house and get money. Don't annoy the teachers as much."</p>

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4	13 yo female	<p><b>Background:</b> Lived at home with her mum, two sisters, one brother. Shared a conflicted relationship with mum was filled with conflict - she moved out of home briefly prior to Catalyst. Liked school - had recently made some new friends there. <b>Lead-in:</b> H9's Lead-in experience was mixed. Lead-in was cool but really hard as it was her first time carrying a pack while hiking, and she felt disorganised. <b>Expedition:</b> Didn't know any of the participants in advance - anticipated everybody would be mean to her, and that everybody would be unhappy. Although there was some conflict, the reality was closer to the opposite - she made a lot of friends. <b>Highlights:</b> Opportunity to meet new people – was hopeful about continuing the friendships back at school. Enjoyed abseiling, flying fox, and canoeing. <b>Lowlights:</b> Conflict between other group members at beginning of the program. Being told to shut up when she tried to help them. <b>Outcomes:</b> Had learned how to find calm, which meant she attracted less conflict. Aimed to try harder at school, help out more around the house, and be kind to herself rather than take her distress out on herself. She also thought the program had helped to become more tolerant, but also more assertive. Felt able to let go of the past. Said Catalyst was life-changing. <b>Recommendations:</b> Add in a little bit of “free time” once the group had set up at each new campsite.</p>	<p>“I thought like everyone was going to be so mean to me. And like I'd have no friends to hang with. And like we weren't going to be happy, we were just going to be picking on each other ... it wasn't like that at all ... we were all like family - we always fight and then make up.”</p> <p>“It was pretty cool. It was really hard though. Because it was my first time carrying those packs. And I wasn't organised.”</p> <p>“When I got back, I felt so calm ... I can let go of the past ... I am going to say it was really fun and life-changing ... it will probably make me a better person.”</p>



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5	14 yo male	<p><b>Background:</b> Lived on school campus and was happy with his living situation and his family at home, although he had been in a few fights recently due to anger management issues, and was disrespectful to some teachers. Despite the fights, he felt that got along with other kids. The school had called him to the front office and told him that he been selected for the Catalyst program which he was excited about. <b>Lead-in:</b> He referred on several occasions to an activity in which he held the partial body-weight of his 9 fellow participants (this was a highlight) as were the 10m abseil and canoeing. <b>Expedition:</b> Everything about the Expedition was good, particularly games, including “mafia”, “stomp”, and a trust activity which had been important to him. He had coped well with being as he was used to living in the bush and being away from home. <b>Highlights:</b> Hiking - provided a sense of accomplishment. 10m abseil. <b>Lowlights:</b> 30m abseil (he only made it half-way and came back up). An incident that lead him to become angry in response to a fellow participant and to then walk away from another participant who tried to calm him down. <b>Outcomes:</b> Pride at being able to support the weight of others. Identified his fear of heights as a weakness. Less likely to get into fights and predicted that his grades would improve as the program helped him to stay focussed and put 100% effort in. Also learned to be able to let things go, a bit step considering his anger problems. Felt that the program was worth the time and effort and that he had a positive outlook on his future, including some specific goals related to becoming a bull-rider and improving his relationship with his older brother. <b>Recommendations:</b> None.</p>	<p>“[I was] excited, at the start, and still am excited [about] the trip, and all the things they told us that we would be doing.”</p> <p>“[I’ve learned] to trust these people here”</p> <p>“Doing the great walk trail, I got stabbed by all these plants, and I just said “Oh, things happen”. (He suffers from anger management issues but has learned to “let things go”.)</p> <p>“It’s just helped me to stay focused, and put 100% effort in.”</p>

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6	14 yo female	<p><b>Background:</b> Lived with her grandparents and brother – things were “pretty bad” because she was constantly arguing with her grandmother, brother, and grandfather. School was “pretty good”, some wagging, but she generally got on with teachers, did her work, and listened. However, she had problems arguing and fighting with some other students, leading to detentions and suspensions.</p> <p><b>Lead-in:</b> Lead-in experience was boring and crappy because she wanted to go home. Meeting new participants and playing the games were positives. Was glad she hadn't gone home by the end and looked forward to the Expedition.</p> <p><b>Expedition:</b> Coped fine away from normal (physical) environment, but felt lonely and frustrated away from family, and bored away from friends. Breaking her comfort zone was a challenge, as was getting along with all of the boys and a couple of the girls. <b>Highlights:</b> Creeking on the first day, and the Expedition abseil. Sense of pride from completing the Expedition abseil, as she did not complete the Lead-in in abseil. <b>Lowlights:</b> The 900 stairs - a difficult feat, the flying fox - scary. Proud and happy after completing each of these activities, though. <b>Outcomes:</b> Learned to try her hardest. Increased courage by getting through the hiking. Learned more about other people, and how to relate to other people. The break from home allowed her to feel better about home. She aimed to treat her family members more positively and help more around the house. She also aimed to develop a closer relationship with her older sister and oldest brother who lived out of home - she hadn't seen them in some time. Predicted her school participation and attendance would increase, and attitude at school would become more positive. Program was worth her time and effort. Believed she had “done herself proud”. <b>Recommendations:</b> None.</p>	<p>“[The Lead-in] was a bit boring and crappy for me, because I wanted to go home. But I didn't end up going home. So then I just couldn't wait to come down here [and participate in the Expedition].”</p> <p>“I learnt [to] try my hardest.”</p> <p>“I might just be positive all the time ... Just give it a go and all that.”</p>

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7	14 yo female	<p><b>Background:</b> Lived with Dad - Mum passed away in the previous year. Brother lived out of home. School less enjoyable than usual as her friends suddenly hated school and she couldn't relate. Decent grades, high intelligence that she could apply more. No history of behavioural misconduct. Bullied in primary school. Sadness got to her - spoke to friends and played play station to "just get over" it. <b>Lead-in:</b> Said it was a good idea to go to Bornhoffen for a shorter duration (the Lead-in) prior to the longer stint (the Expedition) - it gave the group opportunity to practice everything. Enjoyed abseiling, canoeing, and the meals. <b>Expedition:</b> Coped well away from home. No bother being away from friends. Did miss Dad and brother, but knew she would see them soon. Climate was challenging - dealt by using more layers of clothing, raincoat, and singing.</p> <p><b>Highlights:</b> "The fun things" - making new friends, abseiling, and the flying fox (as she conquered fear of heights). Hugging a tree at the top of the flying fox - memorable. <b>Lowlights:</b> Hiking, the cold, and the "really gross", "just yuck" food. The "teasing" incident between the female participants was a challenge. Resolution came from talking this out - better friendships resulted.</p> <p><b>Outcomes:</b> Learned that heights were a weakness, her mental and physical ability allowed her to walk far with a heavy pack, it is enjoyable to walk with company rather than alone, attending to an issue is better than avoiding it, better to not backchat. Aimed to be different with peers, stop pretending to be sick, and improve her sibling relationship. Future looked bright - learning to finish things rather than stop half-way lead her to start believing that she could actually do "it" (e.g. of "it": finish school - something numerous people told her she was incapable of). Now felt more articulate, confident, &amp; tough.</p> <p><b>Recommendations:</b> Better tasting food + greater portion sizes. Better tents, sleeping bags, &amp; mats.</p>	<p>"[The program was] pretty good - ups and downs. But overall it was alright."</p> <p>"Climbing up the hills - that was hard. Climbing down was easy, but climbing up was really hard."</p> <p>"[It was] good to walk with people instead of alone. ... I hang out with people all the time, but this has just highlighted that I really enjoy people."</p> <p>"I finish things now. I don't just do halfway and then stop. I keep going! ... It makes me think that I can actually do it."</p>

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8	14 yo male	<p><b>Background:</b> Lived at home with Mum, Dad, and sister. Brother lived in Cairns. Got on well with each family member - home life was “good”. Dad had “a really big job” - went away every week, coming back on Saturday and Sunday. School was “normal” - achieved Cs and Ds, would get an A or B in subjects he liked. Behavioural conduct good. Got into fights because others bullied him - said he had become used to this. Not many friends at Spinifex. Some close friends from primary school he infrequently saw. <b>Lead-in:</b> Weird - he didn't know anyone - fun at the same time. Making friends helped. The rope and “hands and feet” games were enjoyable, and the debriefing activities stood out - although he saw benefit in and wanted to do them, they weren't very fun. <b>Expedition:</b> [Not covered- see highlights and lowlights.] <b>Highlights:</b> Developed new friendships. Doing fun stuff with his new mates. Flying fox and abseil: semi-highlights. He enjoyed them but had done them before. <b>Lowlights:</b> First time away from home overnight - didn't cope well with this. Missed his family and dog. The cold climate. <b>Outcomes:</b> The program highlighted that he's not scared of much. Came to believe it's always possible to control emotion by changing attitudes. Changed his attitude when it came to dealing with other people and as a result became better at talking. Aimed to improve his grades. Thought his behavioural conduct in class and at home was already fine. Acquired the ability to not be affected by little things, but did still get fired up by bigger things. Learning it is possible to find better solutions for problems would stay with him long-term. Saw a good (“normal”) future for himself. “Heaps worth the time and effort” - privileged to do a free, uncommon program. <b>Recommendations:</b> More height-related activities so people could get over fear of heights.</p>	<p>“I've had some fights. And they're all from the other person starting it. Like they'd hit me first, because apparently I'm like stupid and all that. I don't know. Just the unlucky one.”</p> <p>“It's good fun ... it's fun and awesome ... practically everything [about Catalyst is good fun].”</p> <p>“There is always another solution. You can always control your emotions by just changing your attitude.”</p>

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9	14 yo female	<p><b>Background:</b> Had a 10 month old son – only one of the other participants knew and she was only willing to speak to one staff member about it. Happily lived with foster family (husband and wife and their three biological children) – they were really nice people she got on with. No behavioural issues at school. Achieved Cs and Bs. Got on well with peers. Mental and physical health “all good”. <b>Lead-in:</b> “Chocolate river” (game) and canoeing were stand out experiences. <b>Expedition:</b> Coped well away from home. Missed friends, family, and regular environment (especially showering). <b>Highlights:</b> Enjoyed walking up the 900 stairs, abseiling, and flying fox - even though she feared both the latter two. <b>Lowlights:</b> Hiking in rain and not understanding the point of the program. Hardest thing about being part of a group was talking, but she became better at talking. <b>Outcomes:</b> Her courage, self-confidence, and self-esteem were positively impacted, and she learned to work within a group and get along with others. Found program worthwhile and had a lot of appreciation for the facilitators. Positive about the future. Didn't think anybody else would notice any changes in her. <b>Recommendations:</b> None.</p>	<p>“Thought it [the idea of Catalyst] was boring, but when I came here it was fun.”</p> <p>“It's too hard for me.” (Regarding the interview/interview questions [S5 was very closed off to exploring and expressing her inner experiences - these few words are a good representation of that].)</p>

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10	14 yo male	<p><b>Background:</b> Lived with Mum, Step-dad, and one (brother) of four siblings. Stressful home life due to constant conflict due to moody Step-dad. Poor relationship with biological father - typically fought and hit one another. Low self-esteem. Depression. Self-harmed in grade 7. History of being bullied. Isolated herself because of her troubles and lost friends at previous school. More recently developed a strong friendship group at the new school. Current and regular thoughts of suicide. These issues hadn't been addressed professionally. Tended to receive Cs and Bs - sometimes As. No history of behavioural misconduct. <b>Lead-in:</b> Fun because of the activities and teamwork between participants (teamwork led to harmony). Canoeing was the most memorable - she and her partner got stuck on an island. <b>Expedition:</b> Going without a bed, shower, nice food, and mobile phone was difficult, otherwise being away from home was otherwise fine. Didn't miss her friends, except her close friend in Brisbane and her little brother. <b>Highlights:</b> Teamwork and subsequent harmony of the group. <b>Lowlights:</b> Stop-start nature of hiking. Conflict either side of group harmony (usually due to participants being tired from hiking). Rain and temperature zapped her energy. <b>Outcomes:</b> Wouldn't have participated had she been fully informed of what was involved (particularly hiking), but was thankful in the end. Realised that although things can be difficult, she had the capacity to get through them. Being left to their own devices meant that teamwork was imperative. Despite individual differences and some conflict along the way, this ultimately brought the group together. Found it too difficult to groom herself – but realised that people (especially boys) treat her the same regardless of her appearance. This boosted her confidence and self-esteem. Learned to reduce complaining. Thought the quality of her friendships may improve. Understood how teachers must feel about non-complying students. Didn't acquire tools to counteract bullying. Predicted change in home life because she knew how to reduce her stress and distress. Positive about her future. Believes she can now do anything she puts her mind to. Well worth her time because she communicated with new people and got to engage in new activities. <b>Recommendations:</b> Better tasting food - every other bit of the program was pretty good.</p>	<p>“[I have] anger problems. [The anger problems are] disturbing. Like you get angry at little things.”</p> <p>“First time abseiling. First time canoeing. Creeking. The activities we do. That was good fun.”</p> <p>“I can carry a lot of weight [and] handle being away from home ... It's the first time away from home with just friends.”</p> <p>Future outlook - “[I want to] get along with people, help mum more, change the attitude ... less anger ... won't be going to jail for bashing people ... I want to do something that I really like doing.”</p>

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11	13 yo female	<p><b>Background:</b> Lived with Mum, Step-dad, and one of four siblings (brother). Home life stressful - conflict due to moody Step-dad. Poor relationship with biological father. Low self-esteem. Depression. Self-harmed in grade 7. History of being bullied. Isolated herself because of her troubles and lost friends at previous school. Recently developed strong friendship group at school. Current and regular thoughts of suicide. Tended to receive Cs and Bs - sometimes As. No history of behavioural misconduct. <b>Lead-in:</b> Fun because the activities and teamwork between participants led to harmony. Canoeing was most memorable. <b>Expedition:</b> Going without a bed, shower, nice food, and mobile phone was difficult. Being away from home was otherwise fine. Missed close friend and little brother. <b>Highlights:</b> Teamwork and subsequent harmony of the group. <b>Lowlights:</b> Stop-start hiking. Conflict either side of group harmony. Rain and temperature zapped her energy. <b>Outcomes:</b> Although things can be difficult, she had the capacity to get through them. Being left to their own devices meant that teamwork was imperative. Despite individual differences and some conflict along the way, this ultimately brought the group together. Too difficult to groom which led her to realise that people (especially boys) treat her the same regardless of her appearance. This boosted her confidence and self-esteem. Learned to reduce complaining. Quality of friendships may improve. Hadn't acquired tools to counteract bullying. Predicted change in home life because she knew how to reduce her stress and distress. Positive about her future. Believed that she could now do anything she put her mind to. Well worth her time because she communicated with new people and engaged in new activities. <b>Recommendations:</b> Better tasting food – rest was pretty good.</p>	<p>“We might not have the same personality, we might not get along - like... even though we might have disagreements on this program and stuff like that, we've still all learnt to still stick together and work together.”</p> <p>“Since we've been out here I haven't really had any suicidal thoughts. I've been able to think, and just breathe. And just, yeah have all this open space. And if I need time alone I can just go for a bit of a walk, I guess. And just listen to the birds and stuff like that.”</p> <p>“Even though it's hard, I can still do it. It might take a bit more energy and effort to do, but I can still do it.”</p>

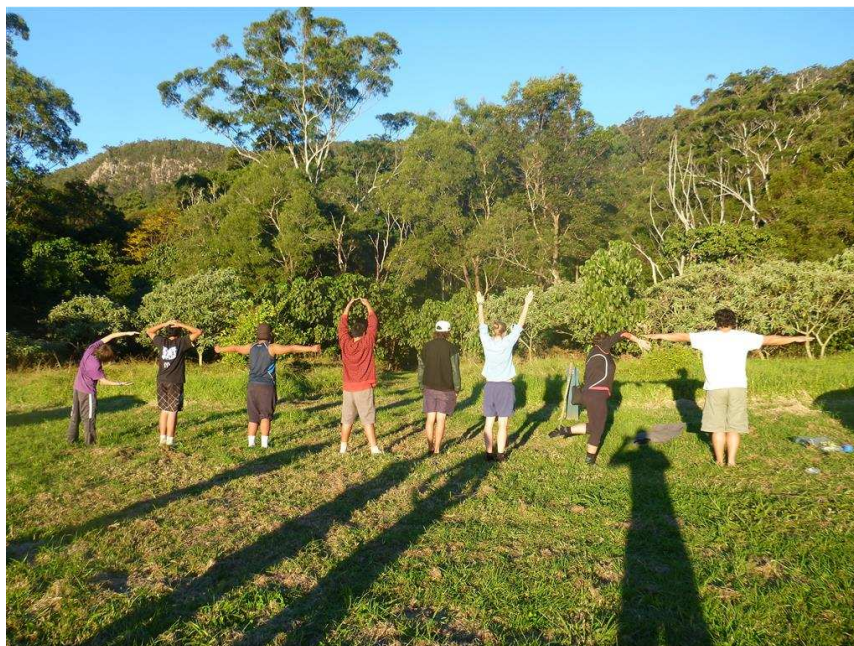
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12	13 yo female	<p><b>Background:</b> Parents split when she was four months old. Mum worked 12 hour days – so she was home alone a lot. Anger management issues over little things – frequent verbal and physical fights with peers. Many detentions and a number of suspensions. Mostly pass grades, although a number of fail grades. Not many close, current, stable friendships. <b>Lead-in:</b> Lead-in was really cool. Enjoyed canoeing across the lake, travelling via plane, abseiling, teamwork, the fun in staying at PCYC for two nights. <b>Expedition:</b> “Good but bad”. Good because she got to hang out with friends, enjoyed walking up the hills, and felt supported by a number of group members (staff members included). Bad because she missed her home, bed, mum, brother, and niece. It really annoyed her that contact with home/phones were not allowed. <b>Highlights:</b> Creeking, low ropes, flying fox, raft building, and “mafia” were the most memorable activities. Having a fire at the campsite, and spending time with her new-made friends, and the accomplishment from managing to get through the entire program were also highlights.</p> <p><b>Lowlights:</b> Having issues with the way one of the facilitators treated her. Learning to get along with the group - refraining from going off at them. The mental and physical drain from hiking. Having to push through tiredness to hike even when it became dark. Not having showers.</p> <p><b>Outcomes:</b> Reduced her habit of complaining. Didn't wear makeup once, and realised that was OK. Learned an “I can do it” attitude to replace feeling down about herself. Also reined in her “I do things by myself because then I know its right” attitude. Felt positive about the future. Aimed to spread less rumours, develop a better relationship with her brother, and achieve better grades.</p> <p><b>Recommendations:</b> Less walking, only having to set up camp once, one male and female facilitator (rather than two male facilitators), visit the beach during the program.</p>	<p>“It was hard! All I was thinking is ‘I cannot do this’ ... Yeah. Looking at the hill and going ‘I can't do that’. Walking up a steep bit going ‘Holy hell this is hard’ ... with everyone else's support [I changed my attitude to] ‘If I can make it to there, I can have a rest’, and then once I made it to there I just kept going and go ‘If I can make it to there, well then, I can...’ - you know, just setting myself little goals and going with it.”</p> <p>“Doing the actual whole program ... like getting through and finishing it [was a highlight].”</p> <p>“I've set myself up. Like might try harder in school, and I've decided where I want to be, where I want to go, and what I have to do to get there.”</p>



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13	14 yo male	<p><b>Background:</b> Lived at home with Mum, Dad, and brother, and got along well with them all. Achieved decent grades despite feeling overwhelmed by school work. Did not (and had never) consider(ed) anybody his friend due to self-proclaimed issues with trust and respect – tended to treat others poorly as a result. Knew all but two of the other participants prior to the program. <b>Lead-in:</b> Enjoyed the Lead-in (particularly the canoeing, as although he had lived in Mt Isa for 11 years, this was his first time going out on the lake). Did not complete the 10 metre abseil as he did not trust the equipment would keep him safe.</p> <p><b>Expedition:</b> Very happy over completing the 30 metre abseil. Coped pretty well being away from home by taking each day by the hour. Had trouble sleeping because he didn't have a mat. <b>Highlights:</b> Completing the 30 metre abseil despite fear, rain, and entering a dark cave. The flying fox experience.</p> <p><b>Lowlights:</b> Insensitive group members. Differing needs and abilities of group members while hiking. The temperamental weather. The dark, cramped space caving involved. <b>Outcomes:</b> Learned that everybody is different, and that it was important he started treating those differences with respect. Realised that life was about getting out and pushing his comfort zone rather than hiding away. Learned to have more trust in others via activities requiring teamwork. Aimed to continue improving his relationships/the way he treated people.</p> <p><b>Recommendations:</b> Either easier but still physically exertive mode of travel (e.g. horse or bike), or shorter walking distances. Better (nicer) food.</p>	<p>“It’s actually helped me realise what’s actually... what life actually means, and what it’s meant for. We’re not going to just stay at home and sit somewhere in the corner where we’ll be safe - we’re actually meant to be getting out and exploring - pushing our comfort zone.”</p> <p>“It’s better to go do it and then fail, then just walk away and not having a go at it and finding out if you can or not do it. You usually don’t know if you’re going to be good at something unless you give it a go.”</p> <p>“Basically it was great, really. I’ve loved every bit about it. The challenges, the negatives, the positives. They all balance each other out.”</p>

ID	Age, Gender (School)	Summary of interview	Quotes that capture the essence of the participants' experience
14	13 yo male	<p><b>Background:</b> Custody battle was ongoing between Mum and Dad. Lived with dad and Step-mum (which is where he wanted to live). Behavioural conduct had shown improvement since he started living with Dad (although he still commonly received lunchtime detentions). Achieved decent grades, but was not good at working in a team. <b>Lead-in:</b> Lead-in was fun. Enjoyed hanging out, relaxing, talking, and playing games (the rope game and “hands and feet” in particular). Having to prepare and cook his own food on a Trangia was a challenge that he ended up overcoming. <b>Expedition:</b> Missed his Dad, Step-mum, warm showers at night, home-cooked dinners, and being able to ride his scooter. Hiking was hard but also fun. Appreciated the Catalyst staff members. It was nice/made it easier to have friends on the program with him. <b>Highlights:</b> Most enjoyed the hiking, creeking, and the two games “mafia” and “stomp”. <b>Lowlights:</b> Canoeing (didn't like his partner and their canoe flipped), differing needs and abilities of group members while hiking (and the associated “whinging”), the rain, having to hike despite availability of drivable roads, having to frequently re-set up the tent. <b>Outcomes:</b> Surprised at his physical ability. Learning to get along with others was one of the most profound outcomes for him. He believed it would be a long-lasting effect that others would notice. The result was a reduced level of intolerance and increased ability to work in a team. <b>Recommendations:</b> Replace some of the hiking with horses, push bikes, or mountain bikes.</p>	<p>“I like to keep to myself sometimes. Like, I like to talk to people. But sometimes I just like to be by myself ... I'm good at doing the work, but not at working within a team.” [attitude before Catalyst]</p> <p>“Hiking with a big bag on - I never thought I'd be... like when I lifted it up at first I thought 'I'm going to die'. But, yeah - I made it here.”</p> <p>“It's easier to get along with people that you have to work with, and not try to do it by yourself.” [attitude toward the end of Catalyst]</p>

Youth participant interviews ( $n = 14$ ) indicated a range of generally positive responses to the Catalyst program. Youths almost universally reported challenging personal backgrounds, including family, school and personal problems. During the program they were faced with not only personal challenges, but also having to learn to trust others. They developed more positive thinking, particularly self-belief, and persistence in overcoming problems. Youths reported that the Expedition hiking was the most difficult component. They reported social challenges in getting along with other participants and developing effective team work. Youths reported developing positive relationships with staff and generally at least one peer, if not several, through the program and looked forward to further engagement with the program, through the Follow-up days. Highlights for the youths were the high adventure activities, including abseiling, caving and raft-building. Youths generally reported feeling more positive towards the future and themselves, as well as being more motivated towards working harder and more harmoniously at home and school.



### Staff and observer interviews

There were six semi-structured interviews with Catalyst staff, 2013 and 2014 (the leadership development manager and five facilitator interviews). In addition, there were three semi-structured interviews with accompanying staff (a teacher, a PCYC youth worker, and a school chaplain). The interviews aimed to capture how interviewees' became involved with Catalyst, background of the youth participant client group, staff experiences of Catalyst program (including the Lead-in, Expedition, and Follow-up program components), program outcomes, overall worthwhileness, suggested program improvements, and any other comments. Audio of the interviews were digitally recorded and transcribed. Summaries of each interview were then prepared (see Appendix C).

Together, these case summaries describe the challenges of working with Queensland youth-at-risk including connecting with schools in low socioeconomic areas and with students who commonly have a lack of home/family support and/or home/family problems, as well as social and behavioural difficulties at school. One of the key, challenging issues in working with schools is to identify, engage, select a group of youth participants who have problems but who are motivated towards, and capable of, learning how to cope better and take positive actions to change their futures. Critical to this process is the initial engagement with the school (who need to have at least one key motivated teacher or behavioural support person or chaplain), the profiling, selection and engagement of potential participants, and then conducting of a Lead-in experience with more than 10 potential participants in order to try to select a group of 10 or so for the rest of the Catalyst program. This is far from an easy or smooth process due the nature of the at-risk target group and the success of this process varied from program to program. The most successful partnerships appear to have been forged over time with some schools (e.g., Woodridge State High School), although this is no guarantee

of success on any one program, as each group is unique. There was general agreement, however, that the selection and profiling process would benefit from further revision and streamlining in particular of the information sent to schools and teachers prior to each program.

The Lead-in, Expedition, and Follow-up program components generally appear to have run well from the point of view of those interviewed, with the typical staff team structure of two school/community staff and two PCYC Catalyst facilitators working well. Lead facilitators had considerable scope for taking responsibility of the entire program which contributed to them having the most significant personal investment and control of the program which generally seemed to be very constructive, although it meant that there was also some notable variation in the facilitation styles and the program design used from program to program. In the future, the possible involvement of a senior adventure therapist could be beneficial in a supervisory role and consulted on training and program design. This could benefit consistency and quality in program delivery.

Most youth participants engaged willingly in most program activities, although typically a few participants who were on the Lead-in did not continue their participation. This is not necessarily a problem, as the Lead-in is, in part, designed to be used by the facilitators as important part of a mutual selection process to determine the participants who are suited to the Expedition. However, it is necessary for there to be sufficient intake in the Lead-in to allow for drop-outs and still provide for a group size of at least 10 on expedition. The structure of the Follow-up programs and attendance varied somewhat according to location and program.

Program staff observed improvements in self-esteem and self-confidence as, arguably, the most common outcomes, followed by the development of social skills, awareness of the effects of one's behaviour on others, and the positive experience of being in a supportive group. Nevertheless, group processes were far from easy and required considerable skills, patience, and effort on the part of facilitators to negotiate and maintain participants' awareness and compliance with group agreements (an important part of the Lead-in, Expedition, and Follow-up). Participants appeared to struggle somewhat with self-reflection activities and facilitators clearly worked hard to help facilitate reflections about how participants' personal actions had consequences for themselves and others. In each program, there appeared to be some participants who derived clear, positive growth and benefits, whilst for other participants the signs of change were still in their early stages, and for some participants, there were no obvious signs of change.

From the leadership development manager's point of view, the organisational sustainability of the program needs consideration. As the Catalyst program is not core-funded by PCYC it is dependent on external funding. In order for the Catalyst program to be sustainable into the future, it is likely to need at least some core funding commitment from PCYC.

## Discussion

The PCYC Catalyst program uses challenging, adventure-based activities in a supportive group environment based on the adventure-based counselling model in order to effect positive change in the lives of youths at risk of adverse outcomes in their educational, vocational, and life-course pathways. The program partially exhibits each of the key features of adventure therapy programs suggested by Williams (2002) and thus, may currently be most accurately described as a therapeutic adventure program or an adventure-based intervention program with therapeutic goals:

1. **Diagnosis:** Specific participants are targeted; however, the criteria for selection is somewhat unclear
2. **Outcomes:** Some remedial outcomes are intended, but these are somewhat broad and lacking in specification
3. **Intervention:** The intervention is somewhat tailored to the needs of specific groups and individuals but in many ways is a generalised intervention
4. **Design:** The program design is based on the adventure-based counselling and experiential learning theory. However, the guiding framework lacks focus on specific therapeutic frameworks.
5. **Research:** The program takes research and evaluation seriously, but is the early stages of integrating research evaluation into a systematic approach.
6. **Facilitation:** Programs are conducted by staff trained in outdoor skills and various aspects of youth-related work. Staff with more training in recognised therapeutic processes would help to enhance the therapeutic processes.

The overall outcomes are comparable to adventure education programs, but appear to be equivalent to approximately two-thirds of the size of effects for comparable adventure therapy programs. Thus, the Catalyst programs appears to have promising potential, with small to moderate positive outcomes, but this program could strengthen its therapeutic processes and become even more effective.

For life effectiveness skills, youth participants reported small to moderate, positive, short- and longer-term impacts. For mental health, youth participants reported large longer-term improvements in psychological well-being, and very little longer-term effect on psychological distress. There were reductions in some problematic behaviours (particularly Harming, Fighting, Stealing, and Vandalism), however there were increases in some behaviours (Cheating, Vehicles, Wagging, and Drug Use). Participants reported that it was “mostly true” that the program contributed to their personal and social development. A summary of the youth self-report and observer ratings in relation to the youth development objectives is presented in Table 14, followed by a more detailed discussion and recommendations.

Table 14

*Summary of Effect Sizes for Youth Self-report and Observer Ratings for Each Catalyst Youth Development Catalyst Program Objective*

Youth Development Objective	Self-report		Observer		Overall summary comment	Rating out of 5 stars
	Short-term	Long-term	Short-term	Long-term		
Life effectiveness (10)						
Emotional Resilience	0.12	0.25	0.79	0.05	Small +ve change	☆☆
Goal Setting	0.11	0.04	0.65	0.40	Small to moderate +ve change	☆☆☆
Healthy Risk Taking	0.09	0.50	0.63	0.15	Small to moderate +ve change	☆☆☆
Locus of Control	0.19	0.11	0.43	-0.23	No overall change	
Self Awareness	0.02	0.13	0.56	0.23	Small to moderate +ve change	☆☆☆
Self Esteem	0.29	0.45	0.91	0.18	Moderate +ve change	☆☆☆☆
Self Confidence	0.13	0.45	0.61	0.40	Moderate +ve change	☆☆☆☆
Communication Skills	0.30	0.73	0.53	0.43	Moderate +ve change	☆☆☆☆
Community Engagement	0.19	0.04	0.34	0.48	Small to moderate +ve change	☆☆☆
Cooperative Teamwork	0.21	0.32	0.58	0.31	Small to moderate +ve change	☆☆☆
Mental Health (2)						
Psychological Distress	-0.31	-0.10	0.80	0.00	No overall change	
Psychological Well-being	0.07	0.80	0.12	-0.29	Small to moderate +ve change	☆☆☆
Behavioural Conduct (1)	-	0.12	0.75	0.27	Small +ve change	☆☆

Note. ☆ = Very small positive change (~0.1), ☆☆ = Small positive change (~0.2), ☆☆☆ = Small to moderate positive change (~0.3), ☆☆☆☆ = Moderate positive change (~0.5), ☆☆☆☆☆ = Strong positive change (~0.6+)

## Life effectiveness

Youth participant self-ratings from the beginning to the end of the program indicated small, positive changes in all 10 personal and social life skills, with an overall ES of .16, an 8% change. This is a similar sized effect to outdoor education programs with high school-aged participants (.21; Hattie et al., 1997) but is lower than for adventure therapy programs with similar aged participants (.41; Bowen & Neill, 2013). Youth participant self-ratings indicated that the small short-term improvements in life skills were sustained in the longer-term and even continued to improve (.30).

Observer ratings of life effectiveness indicated moderately large positive short-term change (.60) and small positive longer-term changes (0.24). Youth participants and observers concurred in that rated small to moderate longer-term improvements in life effectiveness skills (0.30 and 0.24 respectively). These longer-term effects appear to be similar to, but somewhat weaker than, the longer-term effects in the adventure therapy program benchmarks identified by Bowen and Neill (2013).

## Mental health

Mental health can be conceptualised as consisting of two independent components: psychological distress and psychological well-being. Results varied according to the type of mental health being measured. Results also varied between participants and observers.

In the short-term, participants reported a heightening of psychological distress during the Expedition, probably due to the physical and psychologically challenging nature of the Expedition. Previous outdoor education research has also found a temporary increase psychological distress during the program (Neill & Heubeck, 1995). This short-term heightening of psychological distress, however, was largely temporary, with almost no evidence for longer-term changes in the level of psychological distress (ES = -0.10).

In the short-term, participants reported little change in psychological well-being (ES = 0.07), however participants reported strong positive change in psychological well-being in the longer-term (ES = 0.80). Thus, from the participants' point of view, they had notable longer-term improvements in their psychological well-being and little to no change in their psychological distress. The improvements in psychological well-being are greater than the Clinical outcomes reported for adventure therapy programs by Bowen and Neill (2013), whilst the psychological distress outcomes are lower.

Observer ratings indicated a different pattern of changes for the two dimensions of mental health. Observer ratings indicated a strong short-term improvement in psychological well-being (0.80), with little short-term change in psychological distress (-0.12). In the longer-term, however, observers saw no change in psychological well-being (0.00) and a small worsening of psychological distress (-0.29).

Thus, participants reported considerable long-term positive improvements in their psychological well-being with little to no change in their psychological distress, whereas observer ratings indicated no long-term improvements in well-being and a small long-term deterioration in distress.

## Adolescent behavioural conduct

Longer-term changes in adolescent behavioural conduct were measured in this evaluation through self- and observer- reports of the frequency of engaging in a variety of relatively common adolescent delinquent behaviours. There was mixed evidence about the impact of the program on behavioural conduct. According to youth participants, they engaged, overall, in slightly less delinquent behaviours. In particular, youths reported that they engaged in less fighting, stealing, harming, and vandalising, but also in slightly more cheating, drug use, and vehicles. According to observers, there was a large short-term reduction in behavioural conduct problems (during the Expedition) and a small, longer-term improvement. Thus, the

program appears to have had positive overall effects on behaviour although, as with most other outcomes, the changes in behaviour do not appear to be as large as benchmarks derived from the adventure therapy meta-analysis by Bowen and Neill (2013).

### Program ratings

Youth participants generally rated the program, facilitators, the group, and their outcomes very positively. Facilitators were strengths of the program, with an average rating of 6.4 out of 8, although this also suggests some potential for improvement.

Group dynamics were rated positively (5.5 out of 8), however it was clear from open-ended comments, observations, and interviews that group dynamics were one of the most challenging aspects of the program for participants and staff. The fundamental challenge seemed to revolve around individuals with personal and social problems learning to work and live effectively together during the Expedition. Resolution of this challenge was largely achieved, with youth participants ultimately feeling that they were reasonably involved in the group (5.8 out of 8).

The overall ratings of the program were very positive (6.7 out of 8). Each of the phases (Lead-in, Expedition, and Follow-up) were rated positively, with the highest ratings for the Expedition and the lowest ratings for the Follow-up. Participants felt that the Expedition was somewhat too long and difficult, with many participants commenting on the difficulty of hiking up-hill with a heavy pack. In contrast, the Follow-up was rated as somewhat too short and easy. Although participants rated the Expedition as somewhat too long and difficult, it should be noted that challenge-based adventure therapy intentionally aims to challenge participants in order to help them develop new skills and coping strategies (Neill & Dias, 2001) and most participants acknowledged the value of the challenging Expedition in catalysing their learning about themselves, and that hiking got easier as they went along. Nevertheless, it remains important to ensure that sufficient perceived support is provided in order to nurture growth through challenging experiences (Neill & Dias, 2001). The fact that the Follow-up was rated as somewhat too short and easy suggests that the program left participants hungry for additional health-promoting challenges rather than being shy of them.

Youth participant interviews revealed that participants typically experienced one or more pre-occurring family, social, behavioural, and/or psychological risk factors and problems. Teachers played an important role in initially engaging participants and encouraging their participation in the Catalyst program. However, several students reported not being sufficiently well informed about the program and its difficulty. Some participants felt coerced or occasionally forced to participate. All three program components were positive experiences, with highlights related to the peak adventure activities and the development of group teamwork and harmony. Lowlights related to the physical, social and personal challenges of hiking and group conflict. Outcomes reported by participants often related to self-belief and self-confidence, positive thinking, resilience, and positive future outlook.

### Strengths and limitations

Strengths of this study include the use of multiple perspectives and multiple outcome measures in a longitudinal manner to assess short- and longer-term changes, as well as the use of mixed methods and benchmarks. Limitations include that this was a non-experimental study. Thus, there was no control group to compare with the experimental group. As a result, observed changes could be due to natural development, self-selection bias (there was limited analysis of drop-outs), and/or methodological artifacts such as regression to the mean. Thus, the results of this study, whilst substantial, should nevertheless be interpreted with caution.



## Recommendations

Overall, the results indicated that the Catalyst program was, by and large, a positive, rewarding experience for participants with relatively minimal negative side effects. Nevertheless, these results also indicate that youth-at-risk participant outcomes could potentially be enhanced by improvements to the program design and delivery. Such changes could enhance achievement of the targeted outcomes. Points for future consideration include:

1. **Therapeutic adventure vs. adventure therapy** – The Catalyst program is more accurately described as “therapeutic adventure” than “adventure therapy”. The Catalyst program targets at-risk participants and provides a secondary prevention treatment program that appears to facilitate positive personal, social, and behavioural change. However, the Catalyst program lacks the key distinguishing features of an adventure therapy program. In particular, if it was sought for the Catalyst program to become recognised as adventure therapy program, it would be necessary to become more engaged in client diagnosis, adoption of therapeutic processes with a stronger theoretical basis, and be supervised by staff with recognised qualifications in clinical psychology. Very few, if any, adventure-based intervention programs in Australia currently meet such criteria.
2. **Screening** – Screening was key to the success of the Catalyst program. The screening process could be improved by developing more explicit inclusion and exclusion criteria for referral agents. The program appears best targeted as a secondary prevention program (for adolescents with early indicators of problems). In many cases, youths clearly benefitted from encouragement from teachers to become involved in the Catalyst program, however it is critical that youth’s perceive their participation as fully informed and voluntary. In the case of at least one program (Woodridge 2013), a critical mass of participants appeared to feel coerced and this contributed to problematic behaviours during the Expedition which eventually lead to its cancellation. At the other end of the spectrum, participants who were not notably at-risk were selected for one program (which continued to be delivered, but not as a Catalyst program). Integration of an existing, recognised framework (such as the Common Approach to Assessment, Referral and Support; Australian Research Alliance for Children and Youth, n. d.) for screening and intake assessment purpose could assist in profiling participants and discussing their needs. It could be beneficial to initially target a larger group (e.g., 15) for the Lead-in, to allow for drop-outs and to help ensure that the Expedition and Follow-up are delivered for groups of a reasonable size (e.g., 10).
3. **Physical challenge of initial Expedition hiking** – Participants’ main complaint related to the physical challenge of the Expedition hiking, particularly the initial day or so (hiking out of the Numinbah Valley). Many participants also recognised this physical challenge as part of the process, however this should be clearly disclosed during recruitment and screening. Strategies may also be considered for mitigating (but not removing) the physical challenge of the initial up-hill Expedition hiking. For example, PCYC could work more closely with schools and participants with regard to pre-Expedition fitness training. Another option could be to rationalise Expedition pack weights, possibly by weighing packs and scrutinising contents more closely prior to leaving base and/or providing more gear swap and/or food re-supply opportunities along the way.
4. **Group storming and norming during Expedition** – Several groups and many participants were significantly challenged by difficult group relations during at least the first several days of the Expedition. Most groups succeeded in learning how to work together, with the assistance of facilitators appropriately and useful using group adventure-based counselling techniques such as group contracts and challenge-by-choice principles. However, it may also be beneficial to explore additional strategies for group and facilitation management. Facilitation methods varied considerably between programs (depending on facilitator). Perhaps the best ideas about group management techniques could be identified, pooled, and then become more standard.

5. **High adventure activities** – The highlights of the program for almost all participants were the “high adventure” activities (e.g., abseiling, flying fox, caving, raft-building). It could be useful to consider ways in which the program might increase exposure to these activities (e.g., through longer sessions, multiple sessions and/or by providing other adventure activities). Additional possibilities might include rock climbing, orienteering, creeking, swimming hole activities, and additional group initiative challenges whilst on Expedition (e.g., the beam).
6. **Reflective activities** – Many participants struggled with self-reflective activities (e.g., journal writing, solo time, and group discussions). Nevertheless, these activities appeared to be critical to developing self-awareness, self-understanding, and self-disclosure. Implementation of these activities could be reviewed and potentially revised to help achieve greater impact.
7. **Follow-up activities** – Overall, participants rated the Follow-up component of the program less favourably than the Expedition and Lead-in components. Participants also rated the Follow-up as somewhat too easy and too short. Participants appeared to expect a more challenging capstone experience.
8. **Future evaluation** – An on-going model for monitoring program impacts should be developed. This could be a streamlined version of the current evaluation. Ideally, a future evaluation approach would allow for comparison with results from the current evaluation and provide closer to real-time program monitoring and feedback for continual program development.
9. **Program sustainability** – The Catalyst program is well situated for future viability in terms of location, facilities, equipment, expertise, and needs of youth-at-risk. However, the program’s sustainability is highly vulnerable due to its reliance on short-term cycles of external funding. To the extent to which the program objectives and demonstrated outcomes are seen as aligned with the PCYC mission, the Catalyst program, or a revised version of the program, appear to warrant consideration for further development and possible expansion through core funding.



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