

Delivery and evaluation of the 'Ride.Life' mountainboarding program for rural adolescent males

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The present study provided rural adolescent males who might otherwise not seek professional psychological help with an innovative program, based on physical activity, which would link them into a wider sporting community. The aim of the study was to evaluate the effectiveness of the program in bringing about improvements in various areas of participants' mental health.

Participants were ten males ranging in age from 15 to 18 years residing in and around the Ballarat area. They were recruited in consultation with the coordinator of the YouthTracks @ TAFE program at the University of Ballarat and were identified as being at-risk of developing mental health problems. Results suggested that participation in the program contributed to statistically significant improvements in some aspects of the participants' mental health. Furthermore, participants reported an enjoyment of mountainboarding and described the difference the program has made to their lives. Findings of this study provide preliminary support for the mental health and social gains potentially obtained when rural youth are engaged in an innovative and enjoyable physical activity program.

ACKNOWLEDGEMENTS

This program was funded by a 2007 Special Grant from the Windermere Foundation awarded to Candice Boyd.

Our thanks and respect go to Deborah McLehney-Albert, former coordinator of the YouthTracks@SMB program at TAFE, without whose support this program could not have been realised.

We acknowledge the participants for their willingness to participate in the program and contribute to the evaluation.

The evaluation of this program was conducted by Evan Kemp as part of a Bachelor of Arts (Psychology) (Honours) degree.

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The health consequences of loneliness and isolation are well known (Moon, Meyer & Grau 2000). A sense of not belonging is detrimental to one's mental health, can be a precursor for depression, may jeopardise a person's psychological sense of well-being and may increase the risk of suicide. Research also shows that loneliness is most common among adolescents and the elderly. For rural adolescents, loneliness is worsened by geographical isolation and a lack of local facilities (Boyd, Aisbett, Francis, Kelly, Newnham & Newnham 2006).

Past research also reveals that group membership, a feeling of confidence and a secure sense of self is fundamental to psychological well-being (Antonovsky 1984; Lee & Robbins 1998). The enduring sense of confidence gained from group membership is believed to assist an individual in effectively managing stressful or challenging situations and possessing the motivation to confront problems and instigate change (Antonovsky 1984). In addition, strong social connectedness derived through peer affiliation is believed to act as a protective factor for a range of negative psychological symptoms such as depression, stress and anxiety (Williams & Galliher 2006). Research suggests that early intervention is essential to the development of belonging, connectedness and sense of coherence, with adolescence being a development period in which an individual strives to develop their sense of self (Hagerty, Williams, Coyne & Early 1996; Lee, Draper & Lee 2001).

The relationship between physical activity and mental health is also well-established (Scully, Kremer, Meade, Graham & Dudgeon 1998). Being involved in outside activities and the number of hours spent in those activities are significant determinants of adolescents being depressed or not depressed (Donaldson & Ronan 2006). Research findings attest to the positive influence that participating in physical activity has on an individual's mental health (Scully et al. 1998). Furthermore, research focusing on unstructured activity has shown a similar influence to that of formal, structured sport and activity and mental health (Bartko & Eccles 2003).

The sport of mountainboarding (also known as dirt boarding or all-terrain boarding) was first introduced in Colorado in the United States in the early 1990s. Riding a mountain board incorporates the feel of several sports including snowboarding, skating and wake boarding, while having similarities to downhill mountain biking. Mountainboarding

is an outside activity without on-going financial costs for a young person. Recent projects in the United Kingdom have used mountainboarding as a means to engage rural youth in outdoor activity (Sport England n.d.; West Somerset Council 2004).

PRESENT STUDY

The aim of this study was to provide at-risk rural adolescent males – who may otherwise not seek professional psychological assistance – with an innovative program which would link them to a wider sporting and recreational community, and to evaluate the effectiveness of the program in bringing about improvements in various areas of participants' mental health. It was hypothesised that participants would show improvements in mental health after participation in the program and that they would develop links to the mountainboarding community which would continue to develop and maintain their confidence and improve their mental health and emotional well-being into the future.

METHOD

Participants

Participants were ten adolescent males recruited from the YouthTracks @ TAFE (Technical and Further Education) program at the University of Ballarat, SMB (School of Mines) Campus, in Victoria. The program manager at YouthTracks @ TAFE, Ms Deborah McLheney-Albert, coordinated with Dr Candice Boyd in selecting participants. In order to qualify for selection, participants were to fulfil a set of inclusion criteria. This consisted of a history of mental health issues, being aged between 15 and 19 years and a current participant of the YouthTracks @ TAFE Program. Conversely, exclusion criteria applied which included the presence of a diagnosable mental illness, issues with violence or aggressive behaviour towards others and current legal or forensic issues.

The YouthTracks @ TAFE program caters for adolescents whose circumstances and histories make it difficult to participate in mainstream schooling. Students enrolled in the YouthTracks @ TAFE Program typically have a previous history of criminal or gang related activity, drug or alcohol dependence and mental health issues such as depression, attention-deficit/hyperactivity disorder, eating disorder, self-harm and suicidal ideation. Furthermore, such students are likely to be dependent on government financial support, and experience familial conflict and unstable living arrangements. Students work with counsellors at the TAFE to learn to better deal with their personal issues, seek further support from professional services and, in extreme cases, find alternate accommodation.

All participants resided in and around the regional city of Ballarat which has an ARIA+ score of .27 (Department of Health and Ageing 1999). This score falls within the Inner Regional category of ARIA+ (see Appendix 1) and indicates relatively unrestricted access to goods and services and opportunities for social interaction (Department of Health and Ageing 1999). It is important to note that approximately 40% of rural Victoria falls within this category (GISCA 2002).

Instruments

Subjective Quality of Life Scale

Developed by Cummins (1997), the Comprehensive Quality of Life Scale measures quality of life within seven domains: material well-being, health, productivity, intimacy, safety, place in community and emotional well-being (Cummins 1997). A sub-scale of the Comprehensive Quality of Life Scale – the Subjective Quality of Life Scale – was employed in this study.

The measurement of the overall subjective quality of life domain is achieved by calculating a satisfaction score for that domain which is weighted by the importance assigned to that domain by the respondent (Cummins 1997). Participants are required to rate their satisfaction level relating to each domain on a seven point scale ranging from 'delighted' to 'terrible'. Scores derived can be interpreted as individual domains or an overall quality of life score.

Sense of Belonging Instrument

The Sense of Belonging Instrument (SOBI) (Hagerty et al. 1996) contains 27 items and incorporates the antecedents to sense of belonging as well as sense of belonging as a psychological experience. The scale includes eighteen items dedicated to sense of belonging as a psychological experience (SOBI-P), and nine reflecting the various antecedents of belonging (SOBI-A). Respondents are required to rate their feelings on a four-point scale which ranges from 'strongly agree' to 'strongly disagree'.

Sense of Coherence Questionnaire

The Sense of Coherence questionnaire (Antonovsky 1984) measures respondents' understanding of the world in which they live and consists of three components: Comprehensibility, Manageability and Meaningfulness (Feldt, Leskinen & Kinnunen 2005). The first component, Comprehensibility, refers to the extent to which the individual sees their environment as structured and understandable. Manageability refers to the idea that one has the ability to overcome obstacles or stressors. Finally, Meaningfulness refers to the extent to which life's demands are seen as a challenge rather than a burden (Feldt et al. 2005). Each of these concepts contributes to the individual's overall sense of coherence.

Depression, Anxiety, Stress Inventory

The Depression, Anxiety, Stress Inventory (DASS) requires participants to rate responses to questions relating to their own perceived feelings of depression, anxiety and stress. Questions relating to depression typically measure feelings of dysphoric mood such as sadness or worthlessness. Items measuring anxiety relate to symptoms of physiological arousal, panic attacks and fear. Finally, items pertaining to stress measure symptoms such as tension, irritability, and the tendency to react poorly to stressful events (Antony, Bieling, Cox, Enns & Swinson 1998).

Procedure

Ethics approval was obtained from the University of Ballarat Human Research Ethics Committee. Following this, Dr Candice Boyd coordinated the recruitment of participants with Ms Deborah McLlheney-Albert, coordinator of the YouthTracks @ TAFE Program. Ten adolescent males were recruited from the YouthTracks @ TAFE Program. Plain language information statements, consent forms and release forms were distributed to each participant and parental approval required before data collection.

Prior to participation in the mountainboarding program, participants were asked to complete a series of questionnaires pertaining to their mental health, sense of belonging, sense of coherence and quality of life. The battery of questionnaires took no longer than 50 minutes to complete. Participants were supervised throughout and were assisted with reading and comprehension when required.

Participants were invited to take part in a full day mountainboarding program held at the University of Ballarat. At the beginning of the day, participants were matched with one of five mountainboarding mentors. Each mentor is a leader within the mountainboarding community and had previously undergone specialist mentor training with Dr Candice Boyd. In addition to the five

mountainboarders who acted as mentors to the participants, the program was attended by a fully qualified paramedic, an environmental and outdoor educationalist, a social worker, the student researcher and the research supervisor. Figures 1 and 2 illustrate some of the activities that took place on the program day.

Following an introduction session, participants were given their own mountain board and safety gear to keep. Mentors assisted participants in assembling boards and provided advice on maintaining the equipment. From there, participants were given time to explore their new boards, whilst receiving coaching from their mentor. They were then invited to participate in a down hill session on a grass hill located behind the University. The participants were given the opportunity to mountain board at their own pace, whilst receiving advice and encouragement from their mentors.

After a break for lunch, participants were invited back out to the hill and given further time to mountain board. At the conclusion of the outdoor session, they watched a mountainboarding demonstration provided by their mentors. Following this, participants were escorted back inside and presented with information regarding safety, respecting the environment and keeping in touch with their mentor. Before they were sent home, each participant was provided with a bag containing mountainboarding paraphernalia and mental health information.

One month following the mountainboarding program, seven of the ten participants completed the same battery of questionnaires as prior to the program. Participants were further asked to participate in a brief interview with the student researcher to ascertain their experience of the mountainboarding program. Interviews took place in a private meeting room at the SMB Campus of the University of Ballarat. Interviews were recorded on a digital recording device and later transcribed by the student researcher prior to thematic analysis. Three of the ten participants were unable

Figure 1. Participants making their way to the mountainboarding site



Figure 2. Participants enjoying their first mountainboarding session



Table 1. Descriptive statistics for all outcome variables

	Mean	SD	Skewness	Kurtosis
Depression				
Pre-program	6.5	6.83	1.17	-.31
Post-program	4.2	4.82	1.17	-.06
Anxiety				
Pre-program	7.9	6.20	1.43	2.16
Post-program	4.6	3.40	.61	-.74
Stress				
Pre-program	7.2	7.39	.78	-1.13
Post-program	4.2	3.82	1.13	.42
Sense of Belonging				
Pre-program	92.13	14.30	-.83	-.93
Post-program	98.93	15.20	-1.05	-.59
Sense of Coherence				
Pre-program	49.0	13.57	-.79	-.24
Post-program	54.86	16.77	-.59	-.69
Subjective Quality of Life				
Pre-program	62.60	29.69	.58	.05
Post-program	49.90	29.02	.02	-.37

to complete post-program evaluation for various reasons.

RESULTS

Part 1: Quantitative results

Table 1 presents the means, standard deviations, kurtosis and skewness values for depression, anxiety, stress, sense of belonging, sense of coherence and subjective quality of life.

Hypotheses were tested using paired samples t-tests with normally distributed data and Wilcoxon Signed-Rank Tests on data not normally distributed. Analytic procedures were performed to assess the degree of change in mean scores from pre-program to post-program.

Results indicated that mean scores for depression were significantly lower post-program compared with pre-program [$Z=-2.01, p=.03$]. Furthermore, mean change scores

for anxiety were found to be approaching significance [$t(9)=2.16, p=.06$]. Mean change scores for stress were not statistically significant.

Mean change scores pre to post-program for sense of coherence were found to be significant [$t(9)=-3.52, p=.01$] such that sense of coherence was higher post-program. However, mean change scores for sense of belonging and subjective quality of life were not significant.

Part Two: Qualitative results

Two master themes emerged from the post-program interviews with seven of the original ten participants. These were: (1) mental health benefits of mountainboarding; and (2) connection with the wider mountainboarding community. Further, numerous sub-themes emerged under each master theme. Results are presented below according to each theme. In addition to each thematic description, specific quotations are presented to further illustrate each theme. A matrix display illustrating the extent of data saturation is presented in Table 2.

Master theme:

Mental health benefits of mountainboarding

Alleviating boredom

Each participant cited mountainboarding as an avenue of activity which assisted in alleviating their boredom.

Participants were asked how mountainboarding has made a difference in their lives, with typical responses outlining that mountainboarding gives them an activity to pursue in their spare time. For example:

It gives me something to do every time I have spare time, just sitting there, I just jump on the board. I hang out with my friends a bit more because we're always boarding.

It keeps you from getting bored, which in turn stops people I know from doing things they shouldn't ... criminal things.

It has given me something better to do during the day.

Table 2. Thematic conceptual matrix by participant

Participant themes	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Participant 6	Participant 7
1. Mental health benefits							
o Alleviating boredom	+	+	+	+	+	+	+
o Enjoyment	+	+	+	+	+	+	+
o Positive social aspect	+	+	+	-	+	+	+
o Getting outdoors	-	-	+	-	+	+	-
o Made a positive difference (includes being valued)	+	+	+	+	+	+	+
2. Connection with wider sporting community							
o Mentor as a teacher	+	+	+	+	+	+	-
o Difficulties in maintaining mentoring relationship	-	-	+	+	-	-	+
o Utilisation of internet	+	-	+	+	-	+	+

Enjoyment

A further theme of significance to emerge was enjoyment of the sport of mountainboarding. Each participant expressed their enjoyment of mountainboarding, although each described differing aspects of the sport which they enjoyed. For instance, participants reported:

It's grouse, it's awesome. It's good, it's really good.

I'll say it myself, I enjoyed it. I loved it, the best thing that's happened to me since I have moved down here.

It is good. Better than most of the things I end up doing.

Positive social aspect

All but one of the participants mentioned the positive social aspect of mountainboarding. Participants who reported enjoying the social opportunities provided by mountainboarding said that their involvement had provided opportunities for social interaction which allowed them to build friendships with others. Typical responses included:

Yeah that [mountainboarding with friends] is pretty fun.

... the day after we got them [mountain boards] we took two other mates out [not program participants]. Then the following week he [friend] bought a mountain board.

Research findings attest to the positive influence that participating in physical activity has on an individual's mental health ...

Getting outdoors

Three of the seven participants expressed enjoyment of spending time outdoors whilst mountainboarding. Typical responses cited mountainboarding as providing an opportunity to 'escape' outside and become physically active. Responses included:

Yeah it's pretty good. Better than sitting inside.

It gives guys an opportunity to escape sometimes ... get outside, and I guess have a bit of fun with their mates as well.

It beats being on the computer all day.

Made a positive difference

When participants were asked if participating in the mountainboarding program had made a positive difference to them, each responded in the affirmative. Participants reported that since participating in the mountainboarding program, they now have a new activity to pursue in their spare time, experience boredom less frequently and have a new means of social interaction. Further, participants felt

fortunate for the experience and grateful for the opportunity. For example, participants reported:

It's something that most people probably wouldn't be involved in.

I never thought in my wildest dreams I'd be doing anything like this.

Nothing has really failed me, it's all just worked, pretty happy ... grouse I got a mountain board out of it ... it's all I do now, really.

It definitely has [made a difference]. Just really keen to do things, just mountain board every weekend ... [weekends] are not boring, not what are we going to do this weekend. It's just, snap, call a couple of friends and meet down at Victoria Park [popular mountainboarding location].

Master theme:

Connection with wider sporting community

Mentor as a teacher

All but one participant reported that they believed their sporting mentor to be a good teacher. It was generally felt that mentors on the program day were well informed, easy to communicate with and provided sound and accurate advice. For example, participants reported:

He [sporting mentor] makes the hardest thing look easy, he's a really good teacher. He taught me most of the stuff I can do. He keeps pushing me forward to do things that I wouldn't think of trying. He just persuades me that I can do it ... he gets me to do things which challenge me a lot, he's stoked and I'm just stoked that I actually did it ... he's a great guy.

Pretty helpful. Helps if you were doing something wrong ... they were teaching us how to stop properly and just all the safety stuff.

[My sporting mentor] taught me everything I know pretty much.

Difficulties in maintaining mentoring relationship

Although many positive aspects came out of post-program interviews, one aspect of special mention was the reported difficulties faced by participants in maintaining their relationship with their sporting mentor after the program day. Difficulties were reported by three of the participants, while two of the four who did not report this as a problem shared the same mentor who was extremely effective in maintaining communication. One of the obstacles in maintaining communication appeared to involve restricted access to the internet or problems with obtaining credit for mobile telephones. Further, in some cases, participants had no access to any form of telecommunications with both their home phone and mobile phones disconnected. For example, participants reported:

I haven't really talked to him that much because I don't have a phone.

I got a call from him once.

I didn't really talk to my mentor that much.

Utilisation of internet

As a means of maintaining continued contact with their sporting mentors and the mountainboarding community, participants were directed on how to use the Australian All Terrain Boarding website (www.ausatb.org). Participants were encouraged to utilise the website to initiate and maintain contact with their mentor. Further, participants had the opportunity to join the discussion forum and converse with other mountain boarders from around the country. Interviews revealed that five of the seven participants reported that they had used the website. However, the two that neglected to utilise this resource reported no access to the internet. For example, participants reported:

It is a good idea, because I can keep in contact with [my sporting mentor] without using credit [mobile phone]. I've met like three or four people [on the message board] who I have [since] been boarding with.

I have already signed up to it ... I have [chatted with] a few people.

I went onto it a few times, and talked on the forum page a little bit ... just spoke to whoever was online, did it a couple of times, it was good. It sort of keeps me in the loop of what's going on and the events.

DISCUSSION

The findings of this study suggest that programs involving unstructured physical activity such as mountainboarding have the potential to engage disadvantaged, rural, adolescent males who would otherwise not have the means to participate. This program has provided future researchers with preliminary evidence that at-risk adolescent males from rural areas can potentially gain mental health benefits from participating in recreational activity with the assistance of a sporting mentor. Furthermore, individuals connected to a wider sporting community may feel a connection to that community otherwise missing in their lives. Innovative programs such as this have the potential to provide disadvantaged individuals with the opportunity for social interaction, to escape from their normal activities and to enhance their mental health and well-being.

This program was able to engage participants due to its innovative nature and relaxed approach. At no point were participants asked to do something with which they were uncomfortable and no pressure was placed on participants to step too far out of their comfort zone. It can be taken from post-program interviews that this program exceeded the expectations of some participants. The quality of the equipment and organisation of the ride day were far better than some participants had expected. This demonstrated to participants that the program was serious and that organisers

were not prepared to disappoint participants with the program. This point is very important, as some participants had experienced various disappointments in their lives, which may have contributed to their low expectations. Therefore, the way in which the program was organised and implemented influenced the type of mental health and social gains obtained by participants.

Theorists employing the developmental psychopathological framework contend that individuals typically face new and unique challenges which they must confront during adolescence (Cicchetti & Rogosch 2002). Successful adaptation to these challenges can contribute to the integration of the biological, social, cognitive and emotional domains and thus exert a positive influence on the individual's continued development. It is thought, however, that the degree of coherence, or enduring confidence, of the individual may have an influence on their ability to confront challenging situations (Antonovsky 1984). In addition, an individual with a strong sense of coherence is believed to possess the abilities required to actively deal with problems and instigate change (Antonovsky 1984; Antonovsky & Sourani 1988). Therefore, the findings of this study that participants' sense of coherence significantly increased post-program demonstrate some support for the ability of participation in physical activity to socially connect individuals to a wider sporting community and thereby increase an individual's level of confidence.

The findings of this study suggest that programs involving unstructured physical activity such as mountainboarding have the potential to engage disadvantaged, rural, adolescent males who would otherwise not have the means to participate.

There was, however, a somewhat contradictory finding regarding participants' sense of belonging. Although post-program self-reported ratings of sense of belonging did not show a statistically significant difference, post-program interviews yielded some interesting information. An individual with a strong sense of belonging is said to have an intimate connection toward a group or environment and believe their involvement fundamental to the workings of that group (Hagerty et al. 1996). In the case of program participants, interviews suggested that many were beginning to feel a sense of belonging toward the mountainboarding community, with a number even initiating contact with others through the Australian All Terrain Boarding website. Further, participants reported to be keenly observing updated

information posted on the website in relation to up-coming events and opportunities to mountain board.

In summary, the evaluation of the mountainboarding program has yielded some interesting results and significant findings. Post-program interviews found that each participant had enjoyed the program and believed their participation had made a positive influence on their lives. Further, it was discovered that some participants had initiated contact with a number of individuals within the wider mountainboarding community, thus developing their social network. In addition, participants' sense of coherence, or enduring feeling of confidence, was found to significantly increase after completion of the program. Further, mental health was found to improve, with depression significantly decreased. However, it is understood that although participation in the mountainboarding program may have contributed in a positive manner to participants' health, it was not necessarily the instigator of the observed change. The causal nature is difficult to determine due to the nature of the program, its participants, and the lack of a control group. However, when considering the results of the quantitative and qualitative evaluation components in combination, it would be reasonable to attribute positive improvements in the lives of the participants to their participation in the mountainboarding program.

Methodological strengths and limitations

Methodological limitations of this study which limit the ability to generalise the results include lack of a control group, small sample size, and short time-frame between pre-program and post-program measures, which may not have been long enough for participants to gain the psychological benefits associated with physical activity and group membership. However, in spite of the limitations, statistically significant change was still achieved indicating that the effects obtained were large.

Aside from the limitations outlined above, there were a number of methodological strengths associated with this study. One such methodological strength was the utilisation of psychometrically sound outcome measures in the evaluation of the program. Hypotheses were tested statistically, using psychological measures of mental health with known validity and reliability. This is rare in the field of mental health where many programs are evaluated using subjective measures which merely assess the satisfaction level of participants. This study extended this, and not only gauged level of enjoyment but also attempted to measure actual change.

Furthermore, this study utilised two unique measures of mental health: sense of coherence and sense of belonging. These constructs were acknowledged as particularly important to the mental health of adolescents with research continually demonstrating the influence of a developed social connection on mental health (Antonovsky 1984;

Williams & Galliher 2006). The finding that sense of coherence significantly increased post-program gives justification to its inclusion in the test battery. Although the sense of belonging questionnaire did not result in a significant difference, post-program interviews revealed that participants were beginning to feel a sense of closeness to the wider mountainboarding community.

A strength of the qualitative component of the evaluation was the contribution of the researchers to the program itself. The student researcher and research supervisor actively engaged in the mountainboarding program and subsequent sessions coordinated by mentors. This participation by researchers acted to build rapport with participants and enhance the enjoyment of the day. The fact that participants came from a disadvantaged background meant that some displayed distrust towards researchers at the beginning of the program. This was expected, as many participants had previous history with mental health professionals. Therefore, by developing rapport through sharing similar experiences and displaying a human side, researchers were able to form a connection with participants. This connection may have enhanced the quality of responses attained through interview and potentially reduced the rate of participant attrition at post-program evaluation.

Post-program interviews found that each participant had enjoyed the program and believed their participation had made a positive influence on their lives.

SUMMARY AND CONCLUSION

It can be concluded that participation in the Ride.Life Mountainboarding Program for Rural Adolescent Males contributed to improvements in some areas of participants' mental health and feeling of place within their social environment. Findings of this study provide mixed support for both hypotheses, with some mental health improvements found for participants and the initiation of an improved social network within the wider mountainboarding community. However, participants clearly attributed positive changes in their lives to their participation in the program. Participants stated that the program had exceeded their expectations and most were content with the role of their sporting mentor. Findings of this program support the notion that participation in physical activity can exert a positive influence on mental health. In addition, this program offers preliminary evidence for the mental health benefits of unstructured, recreational physical activity and the potential to engage disadvantaged youth with an innovative physical activity program. ■

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APPENDIX

Categories of the Accessibility and Remoteness Index of Australia (ARIA+)

Highly Accessible/Major Capital Cities (ARIA = 0-2)
Relatively unrestricted accessibility to a wide range of goods, services and opportunities for social interaction.

Accessible/Inner Regional Australia (ARIA = .21 – 2.4)
Some restriction to accessibility of some goods, services and opportunities for social interaction.

Moderately Accessible/Outer Regional Australia (ARIA = 2.4 – 5.92)
Significantly restricted accessibility to some goods, services and opportunities for social interaction.

Remote (ARIA = 5.92 -10.53)
Very restricted accessibility to some goods, services and opportunities for social interaction.

Very remote (ARIA > 10.53)
Very limited accessibility to very limited goods, services and opportunities for social interaction.