

Full Length Research Paper

The impact of physical module (adventure-based activity) of Malaysia's National Service Training Programme on team cohesion

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The National Service Training Programme better known as Program Latihan Khidmat Negara (PLKN) was launched by the Malaysian government on the 16th of February 2004 to foster national unity and integration. However, since its inception, no specific empirical study has been conducted on the physical activity module (adventure-based activity) to measure the effectiveness of the programme in improving the process of national unity and integration. Modified Group Environment Questionnaire (GEQ) was used to collect the required data which was administered during the pre and post-test at the respective camps. The present research attempts to measure the effectiveness of physical activity module of the programme which consists of the adventure-based activity curriculum and to study the effects of outdoor activities on team cohesion among the participants of the programme at three camps namely, Tasik Meranti, Tasoh and Guar Chenderai Camps in the state of Perlis, Northern Peninsular Malaysia. Pre and post-test were conducted in order to investigate the effects of adventure-based activity on cohesiveness among participants in groups at the camps. Nevertheless, after the physical activity curriculum at the camps was accomplished, team cohesion was successfully developed in all sub-scales investigated. The statistical analysis of GEQ on the pre and post-test proved that team cohesion among the participants was achieved and significantly different. The physical activity module (adventure-based activity) had increased the level of participants' group cohesiveness and resulted in positive group binding.

Key words: National service training programme, adventure-based activity, team cohesion, Malaysia, youths.

INTRODUCTION

The tragedy of racial riot on 13th May, 1969 in Malaysia has exposed us to the fragility of our society and nationhood. It has also made us realize the importance of mutual tolerant and respect among Malaysians so that peace, progress and prosperity of the nation can be developed towards the establishment of '1 Malaysia'. Thus, managing sensitive issues that beset a multiracial

society requires exceptional strategies and wisdom. In this context, Malaysia has created new approaches to address the evolving issues on race relations and the future goal towards the realization of 'Vision 2020'. Therefore, in order to achieve this noble mission, Malaysians must develop strong group cohesion. Concurrently, they must also be mentally, physically, socially,

politically and culturally matured. One of the ways to achieve this vision is to introduce a compulsory national service training programme that is specially focused on Malaysian youths. In order to introduce The National Training Programme in Malaysia, several modules throughout the programme duration need to be proposed and constructed. One of the designed modules is the physical module which consists of the adventure-based activity. Adventure-based activity could be one of the strategies for people to be personally involved in developing group cohesion.

On 16th February 2004, the Youth Training Programme, which is better known as National Service Training Programme was launched by the government. This programme is commonly known as Program Latihan Khidmat Negara (PLKN) among Malaysians. The target groups for this programme are Malaysian youths, particularly aimed for teenagers (average age 17) who have just completed the Malaysian Education Certificate (SPM) examination. The idea of the programme originated from the National Patriotism Congress which was held on 24th October, 2002 in Bangi, Selangor, Malaysia. The participants who attended the congress were politicians, heads of departments from government ministries, private agencies, academicians and students. One of its resolutions was to develop unity among Malaysian adolescents in order to improve the process of national integration.

The objectives of the National Service Training Programme are to build good personality and develop the spirit of nationalism among adolescents, improve national integration and increase positive attitude towards the programme. In order to achieve these objectives, four main modules were introduced to the participants, namely, physical module (adventure-based activity), nation building module, character building and community service module. All these modules focus on the experiential based learning principles. Experiential based teaching methodology, which utilizes adventure-based activities, is a valid, viable and potentially powerful method for teaching sport psychology concepts to youths.

In general, the objective of the physical module is to build the participants' internal discipline, which in turn is expected to develop cohesion, good personality, encourage self-motivation, increase self-confidence, enhance their understanding in safety contacts, and the general development of the country. In the physical module, the activities include some of the outdoor activities, such as obstacle courses, jungle trekking, survival training and first aid training. The objectives of these activities are to ensure that the participants develop self-confidence with the team, gain team cohesion, team spirits and social interaction among the participants.

Consequently, in the present study, an attempt has been made to rectify this enigma by investigating the effects of experiential based learning programmes and observe its impact on Malaysian youths' psychological

skills development and the evolution of team cohesion. The influence of adventure-based activities among the participants in the physical module of the National Service Training Programme at three camps in the state of Perlis towards team cohesion building will be investigated and explored. In the attempt to find out previous researches related to this field of study, it soon became apparent that adventure-based activity and sport psychology was a relatively new area of investigation, with only a few studies being documented and published in referred journals (Meyer, 2000; Meyer and Wenger, 1998). Both these studies utilized ropes and challenge course activities in the trainings and were exploratory in nature. Outcome and processed results were documented. Meyer (2000) focused on how the team generally developed into a more cohesive unit around social relationship. The previous studies have shown how adventure-based activity can enhance team cohesion and psychological skills development within teams.

The overall objective of this study was to study the effects of physical module elements included in the youth training programme. While the specific objective is to investigate the impacts of the physical module (adventure-based activities) towards team cohesion among the participants in the National Service Training Programme.

METHODOLOGY

The present study applied a pre-test and post-test design (Baumgartner and Hensley, 2006). The group was tested before and after the programme. This design was chosen because it could measure the impacts of the adventure-based activity towards team cohesion over time through the pre- and post-test scores (Berg and Latin, 2004). The dependent variables which included team cohesion were measured by Group Environmental Questionnaire (GEQ) (Carron et al., 1985). Research instruments were administered to the participants.

The participants were initially required to provide demographic and background information which includes their age, gender, place of living, ethnic origin, level of education and marital status. All these variables are important as they influence team cohesion and they were utilized to establish a background profile of the participants. Group Environment Questionnaire was constructed by Carron et al. in 1985. Concurrent validity has been established for the GEQ with the Sport Cohesion Questionnaire, Team Climate Questionnaire, and the Bass's Orientation Inventory (Brawley et al., 1987). In addition, over 40 studies have established the content, predictive, and factorial validity of the GEQ (Carron et al., 1998). Thus, this particular instrument was chosen as it has been the most utilized instrument in team cohesion research and has positive critiques in the recent sport psychology instrument evaluations. The GEQ was derived from a conceptual model that considers cohesion to be a multidimensional construct that includes task and social aspects, each of which reflects both an individual and a team orientation. Four subscales of cohesion are contained in the GEQ, and these include ATG-T (14 items), ATG-S (9 items), GI-T (23 items) and GI-S (15 items) (Table 1).

In this part, the items are based on 5-point of Likert like scale ranging from 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree). The Group Environmental Questionnaire was widely used by many researchers to measure

Table 1. Four sub-scales of Group Environment Questionnaire (GEQ).

Construct	Item No.
ATG-T	14. I'm not happy with the amount of playing time I get.
ATG-S	9. Some of my best friends are on this team.
GI-T	22. All of us will take responsibility for any loss or poor performance by our group.
GI-S	15. Members of our group do not hang out together outside practices and games

team cohesion (Altman, 2006; Campbell et al., 2000; Carron et al., 2002; Chang and Bordia, 2006; Heuze et al., 2006; Kamphoff et al., 2005; Mugford and Tennant, 2005). The pilot study was conducted with the participants of outdoor education course from Sultan Idris Education University, Tanjung Malim, Perak, Malaysia. A total of 100 respondents (n=100) from various places of residence of the Faculty of Sport Science and Coaching were selected. This pilot study was carried out in January 2007 when the participants were attending outdoor education camp. It was carried out to test the reliability of the instrument, that is, Group Environmental Questionnaire (GEQ).

In this study, the researcher used a census sampling technique, whereby the participants were selected from three different camps, namely Tasoh camp, Guar Chenderai camp and Meranti camp, located in the state of Perlis, Malaysia and the all information data of the participants (name, place of origin, etc) were gathered from the National Service Training Department (Jabatan Latihan Khidmat Negara, JLKN). The participants were those from the second batch intake in the year 2007. The sample sizes comprised 994 participants (480=males, 514=females).

Results of analysis on the reliability of group environmental questionnaire

The validity and reliability of the instrument used were ascertained in the pilot study. The validity and reliability were determined based on the four constructs of GEQ, which include the following:

- a). Individual Attraction to the Group-Task (ATG-T)
- b). Individual Attraction to the Group Social (ATG-S)
- c). Group Integration-Task (GI-T)
- d). Group Integration Social (GI-S)

In this study, reliability was carried out using Cronbach Alpha and the total scores based on the four subscales given above.

Reliability of the group environmental questionnaire

The internal consistency for the group Environmental Questionnaire (GEQ) was analyzed using Cronbach's Alpha. The reliability for the four subscales analyzed using Cronbach's Alpha was as follows: Individual Attraction to the Group-Task (ATG-T) (alpha=.836), Individual Attraction to the Group Social (ATG-S) (alpha=.711), Group Integration Task (GI-T) (alpha=.707), and Group Integration Social (GI-S) (alpha=.866). Meanwhile, both the Attraction to the Group-Task and Group Integration Social (GI-S) were found to have strong positive relationships with a team's performance ratings, providing further support for the team cohesion-performance link (Carron et al., 2002). This means that the four subscales of GEQ could be considered as reliable.

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Data analysis

All the statistical analyses in this study were conducted using the Statistical Package for the Social Sciences (SPSS) version 17.0. There were two main phases in the data analysis. Phase one was carried out to discuss descriptive statistic and describe the basic features of the data in the study. Meanwhile, inferential statistic was used in phase two, in which the researcher chose the paired sample t-test and independent sample t-test to determine the difference in the participants' response towards team cohesion between the pre- and post-test.

RESULTS

The goal of this study is to examine the impacts of the adventure-based activity module on team cohesion. Specifically, investigation was carried out in order to identify the influence and effectiveness of the three-month camp towards the development of team cohesion among participants'. The quantitative analysis examined all four sub-scales of the GEQ with an attempt to identify the emerging and consistent threads; the sub-scales will form the foci for analysis of results. The quantitative results (from various demographic factors) were drawn from the Group Environment Questionnaire (GEQ) whereby a total of 994 participants (n=994) (480 males and 514 females) participated in the National Service Training Programme. Data were analyzed using Statistical Package for Social Science (SPSS) programme, version 17.0.

A total of 994 respondents participated in this study in which the numbers of respondents (n) at each camp are n=324 from Meranti camp (32.6 %), n=321 from Tasoh camp (32.3 %), n=349 (35.1 %) from Guar Chenderai Camp. The sample was selected using census technique. The details showed that the number of female respondents (51.7%) is slightly larger than male (48.3%) respondents. By age, majority of the participants were 18 years of age (94.9%) compared to 17 years of age (5.1%). In terms of place of residence, 56.4% of the respondents resided in rural areas and this figure is also greater than those living in the urban areas (43.6%).

Table 2. A descriptive statistic of the GEQ for all the respondents.

Construct	Descriptive statistic of the GEQ					
	(Pre-Test)			(Post-Test)		
	Mean	SD	Rank	Mean	SD	Rank
ATG-T	2.88	.601	1	4.02	.889	1
ATG-S	2.40	.556	2	3.76	.598	2
GI-T	2.36	.392	3	2.39	.365	4
GI-S	2.32	.652	4	3.35	.628	3

GEQ (Group Environment Questionnaire), ATG-T (Attraction to the Group-Task), ATG-S (Attraction to the Group-Social), GI-T (Group Integration-Task) and GI-S (Group Integration-Social).

Table 3. The results obtained from the pre- and post-test of the respondents of GEQ using the paired sample t-test.

Test	Mean	SD	t-value	P
Pre	2.49	.550	.656	.042
Post	3.38	.620		

Significant at $P < 0.05$.

Meanwhile, for ethnic group, majority of the respondents were Malays (77.2%), followed by Chinese (19.7%), Indians (2.4%) and other races (0.7%).

Descriptive statistic of Group Environment Questionnaire (GEQ)

A summary of descriptive statistics for the pre- and post-tests scores for the sub-scale of GEQ is shown in Table 2. The pre-test shows the Group Integration Social (GI-S), Individual Attraction to the Group-Social (ATG-S), Group Integration-Task (GI-T) and Individual Attraction to the Group-Task (ATG-T) sub-scales with the means of 2.32, 2.40, 2.36 and 2.88. These results indicated the favorable level towards team cohesion in the pre-test. Meanwhile, the post-test showed data indicating the changes in the rank order of the post-test scores for the Individual Attraction to the Group-Task (ATG-T), Individual Attraction to the Group-Social (ATG-S), Group Integration-Task (GI-T) and Group Integration-Social (GI-S) sub-scales with the means of 4.02, 3.76, 2.39 and 3.35. Ranking changes were observed in GI-T and GI-S while ATG-T and ATG-S remained unchanged. Individual Attraction to the Group-Task (ATG-T) sub-scale was calculated with the highest possible being scores during pre and post-test with 2.88 and 4.02 respectively. Meanwhile, means for measurements in the Group Integration-Social (GI-S) and Group Integration-Task (GI-T) sub-scales were notably the lowest during pre-test (2.32) and post-test (2.39) respectively.

Objective of measurement

The aim of the present study is to examine the impacts of the physical module (adventure-based activity) on team cohesion building among the participants of the National Service Training Programme. The objective sought was to test the fact that if there would be any significant difference found in the mean post-test scores after participating in the physical module at the National Service Training Programme camp. Therefore, the paired sample t-test was conducted to examine whether there is any significant difference in the pre- and post-test of GEQ in the group of respondents. As shown in Table 3, data indicated a significant result. The result provided positive indication of significance between pre ($M=2.49$, $P=.042$) and post-tests ($M=3.38$, $P=.042$) at $p < 0.05$. Therefore, the objective which is “to examine the impacts of the physical module on building team cohesion among the participants of the National Service Training Programme” showed great significance among the measurements and being accepted. Specifically, the mean scores above 2 points indicated that the overall team cohesion is favorable. Based on the result of the mean scores for pre- and post-test of GEQ ($t= .656$, $P=.042$), the objective proved to be statistically significant (Table 3). Meanwhile, the three sub-scales, Individual Attraction to the Group-Task (ATG-T), Individual Attraction to the Group-Social (ATG-S) and Group Integration-Social (GI-S) showed significant difference between treatments (Table 4).

As indicated in Table 4, Pre-and post-tests of ATG-T, ATG-S and GI-S were found to be significant with means of ATG-T (pre-test: 2.88, post-test: 4.02), ATG-S (pre-test: 2.40, post-test: 3.76) and GI-S (pre-test: 2.32, post-test: 3.35) respectively at $p < 0.05$. In the meantime, there was no significant difference observed for GI-T where the means for pre and post-tests were 2.36 and 2.39 respectively with $p= .191$. However, there was a slight increase in the mean figure which implied that the perception of team cohesion was increased insignificantly. The highest changes of perception on team cohesion were observed in the Individual Attractions to the Group Task (ATG-T) sub-scale whereas the least was observed in the Group Integration-Task sub-scale. Therefore, cohesiveness among participants were observed in all sub-scale tested in this study.

DISCUSSION

The present study used a pre- and a post-test to investigate the impact of the physical module activity on the development of team cohesion among participants undergoing the National Service Training Programme. In discussing the findings of the current study, the quantitative results were used to examine each objective. The sample of the study comprised of 994 students from three different National Service Training Programme

Table 4. The paired t-test of the mean differences in the mean scores of the pre- and post-test for the respondents in GEQ sub-scale.

GEQ sub-scale	Test	Mean	SD	t-value	P
ATG-T (Attraction to the Group Task)	Pre	2.88	.601	-29.32	.001*
	Post	4.02	.889		
ATG-S (Attraction to the Group Social)	Pre	2.40	.556	-17.87	.001*
	Post	3.76	.598		
GI-T (Group Integration – Task)	Pre	2.36	.392	-1.310	.191
	Post	2.39	.365		
GI-S (Group Integration – Social)	Pre	2.32	.652	4.351	.001*
	Post	3.35	.628		

Significant at $P < 0.05$.

camps in Perlis and instrumentations were administered at Meranti camp, Tasoh camp and Guar Chenderai camp. In addition, the Group Environmental Questionnaire (Carron et al., 1985) was introduced in the study. Scales were calculated so that larger scores indicated greater cohesion. Previous research has indicated that the GEQ possessed sound content, construct, concurrent and predictive validity (Carron et al., 1985)

Briefly, the most prominent feature associated with the findings was the clear, unequivocal and prominent participants' perspective of how the adventure-based activity was an instrumental part in the building and development of team cohesion. The quantitative results revealed that three of the four subscales returning significant results. One sub-scale, Group Integration-Social (GI-S) showed no significant change. Statistical analysis was employed to analyze the data gathered in the research. These included descriptive statistic, paired sample t-test and independent t-test (two sample t-test). Comparison of the mean scores was statistically done using SPSS version 17. The initial descriptive statistic analysis showed that the four subscales of the GEQ (ATG-T, ATG-S, GI-T and GI-S) were normally distributed. The result from the post-test of Group Environmental Questionnaire (GEQ) indicated that the Attraction to the Group-Task (ATG-T) was ranked first by the respondents, while Attraction to the Group-Social (ATG-S) was ranked second, followed by Group Integration-Social (GI-S) in the third rank and finally, Group Integration-Task (GI-T). The respondents perceived the entire four sub-scales favorably with high scores in the mean of the four aspects confirmed the fact that the respondents were supportive of team cohesion after having the physical module activity.

The results of the present study contradict with those obtained by Carron et al. (2002) who stated that task type is a moderator for the cohesion performance relationship. However, Widmeyer et al. (1992) support the finding

which states that in light of the conceptual nature of the construct, attraction to the group-task (ATG-T) should have the strongest relationship with team performance. The high mean scores for the task cohesion scales at post-test may reflect the fact that the teams give high emphasis to team-related strategies and interaction and also prepare for the next camp. Meanwhile, Carron et al. (1988) found that, two cohesion variable (ATG-T and ATG-S) were significantly discriminated in a fitness activity programme. In meantime, the other two sub-scales (GI-T and GI-S) were not significantly different. These results were similar with the present study except, out of the four sub-scales examined, only GI-T was reported to be not significant. However, the building of team cohesion among participants was observed positively in all four sub-scales studied. The consistent result obtained in the present study suggested that emphasizing and developing a group as a cohesive task and social unit could contribute to increase adherence in the camp environments. The results for the participants at the National Service Training Programme camps reflected consistent team cohesion during pre and post-test. Nevertheless, it was found that individual perceptions of group cohesiveness were strongly related to different forms of individual adherence behaviour. Therefore, the present study supported that specific aspects of cohesiveness associated with enhanced adherence varied among different groups. The fact that such variability exists emphasizes the need for doing comparative research (Escovar and Sim, 1974). The present study was also supported by Courneya and McAuley (1995). They reported that, in a relationship between cohesion and attitude among university students during a physical activity programme, all four cohesion dimensions (ATG-T, ATG-S, GI-T and GI-S) from the GEQ were found to be positively correlated to attitude with the stronger relationship reported for Individual Attractions to the Group-Task (ATG-T). Cohesion is a construct that

can be examined in relation to both individual and group outcomes (Hoyle and Crawford, 1994). However, the result of using Group Environment Questionnaire indicated that the strongest relationship appears to be that between group estimates of task cohesion and group-related constructs such as team success. Carron et al. (2002) reported that perceptions of team task cohesiveness are relatively consistent among members of the same team. That is, team members perceive their teams' task unity similarly, which provides support for a conceptualization of 'cohesion-as-shared-beliefs' (Carron et al., 1998; Carron and Brawley, 2000; Paskevich et al., 2001). To date, many researchers have examined the positive relationship between cohesion and success in various activities. Interestingly, the study by Landers and Luschen (1974) was one of the few to report on negative relationship between cohesion and team success.

Another potential avenue of research that could prove fruitful is to examine the 'why' of the cohesion success relationship. Paskevich (1995), found some support for the conclusion that collective efficacy was the mediator in the relationship between cohesion and team performance outcome. Greater team cohesion contributes to greater collective efficacy, which, in turn, contributes to enhanced team performance. Similarly, in the present study, there was a strong relationship between cohesion and success among participants at the National Service Training Programmes.

To date, in order to build cohesiveness among participants, the major emphasis within activities has been on individuals, how to recruit, motivate and retain them. This has not been proven effective. Dishman (1984) noted that, after 6 months, over half of those who began a programme were not persisted. Perhaps greater adherence could be produced by changing the focus, not only on the individuals, but on the groups as well. Evidence from the sociological and psychological investigations leads to a conclusion that cohesive groups have a powerful, positive impact (Steer and Rhodes, 1978; Widmeyer et al., 1985).

Across the post-test, nevertheless, the task cohesion (ATG-T) score was relatively high. This is similar with the finding in a study by Ntoumanis and Aggelonidis (2004) that examined 586 male and female volleyball players of the elite and regional level status in Greece. They found that elite players scored significantly higher in Attraction to the Group Task (ATG-T) scores compared to the regional level players. The difference between the two competitive levels is rather not surprising given the fact that elite teams are highly task oriented groups. The similarities can be described as in such groups, the emphasis is placed more on achieving the group's objectives than on developing and maintaining social relationships (Carron et al., 1998). Carron and Spink (1993) stated that in determining whether team cohesion could be enhanced in fitness classes through a psychological intervention programme focusing on team-building

concepts, it was found that participants in an experimental condition expressed more individual attraction to the group task (ATG-T) than participants in the control condition. Hence, the team building programme significantly enhanced individual satisfaction among participants.

Thus, the objective "to examine the impacts of the physical module (adventure-based activity) on team cohesion among the participants in the National Service Training Programme after participating in the physical module could be acknowledged. However, before the objective could be engaged, it is important to discuss the mean difference between the groups in the pre- and post-test of GEQ. The result presented in Table 3 revealed that there was a significant difference between the mean scores for the pre- and post-test of GEQ. Hence, based on findings of this study, there is statistical evidence suggesting that the impact of cohesiveness among respondents after participating in the physical module (adventure-based activity) at the National Service Training Programme camp was significant. Therefore, it can be concluded that in terms of the pre- and post-test, the respondents showed dissimilarities and variations on the characteristic being investigated (Baumgartner and Hensley, 2006).

Burke et al. (2006) have pointed out that understanding individual preferences was important, physical activity preferences are linked to both adherence behaviours and various psychological responses related to physical activity. King et al. (1991) reported that most participants in a physical activity group preferred to be engaged to a physical activity on their own, outside a formal group structure.

Therefore, this factor might have contributed to the positive effect of the programme on the respondents. The present finding is supported by Gatzemann et al. (2008) who mentioned that the physical module activity should result in an increase of individual responsibility, as well as of a feeling of independence and an enhancement of self-development and self-confidence. Moreover, Bogner (2002) explained that the participation in residential field courses would probably promote socialization skills as well. Additionally, pupils face a novel and stimulus-rich setting especially when similar previous experiences may not have a basis for adjustment and incorporation. When comparing the previous study, in which the control group did not involve outdoor programme, Schultz et al. (2004) found that positive changes in cohesion, as measured by the Group Environmental Questionnaire, were apparent in the participants who had either adventure-based activity programme.

Cohesion has been associated with a number of positive individual and group consequences. For example, with higher levels of cohesiveness, group performance is superior, task and social interactions and communications are enhanced, the group is more stable, and role acceptance and conformity to group norm increase. In

addition, individual members experience less anxiety and greater self-esteem; show greater trust, feelings of security and willingness to change and more readily share responsibilities for group outcomes (Carron, 1988). Individual satisfaction has an important connection to both task and social cohesiveness. Widmeyer and Williams (1991) studied the relationship between a series of personal, situational, leadership and group variables and perceptions of cohesiveness among participants during an adventure-based abseiling activity. It was found that individual satisfaction was the strongest correlate of cohesiveness.

Spink and Carron (1992) found that significantly higher ATG-T was reported by those individuals exhibiting reduced absenteeism as well as by those individual exhibiting reduced lateness during a fitness class. Similarly, Carron et al. (1988) also found that ATG-T significantly discriminated between those individual who had withdrawn from an exercise class and those individuals who had adhered. These results were comparable with the result of the present study, suggesting that the participants of the National Service Training Programme stayed and accomplished the physical module (adventure-based activity) primarily for task related reasons. The task is the primary factor around which the participants cohere. When team building programmes are introduced, they have their greatest influence on task cohesion. When ATG-T is low, adherence suffers; nonetheless, when it is high adherence is enhanced.

However, it is also important to note that the process of change or improvement is challenged by several previous studies. Murphy (2001) found no change in the team cohesion scores after the one-time team exercise. The four sub-scales of the GEQ, namely, the attraction to the group task (ATG-T), attraction to the group social (ATG-S), group integration-task (GI-T) and group integration-social (GI-S), were compared. The researcher also reported that no reportable changes were found between the pre-test and the post-test. In her study on primary five students who underwent an adventure-based activity programme in Singapore, Ho (2003) reported that there was no significant difference between the pre- and post-test in term of their overall Group Environmental Questionnaire score due to the short duration involved.

Group-based programmes might play in the reduction of compliance problems in exercise, lifestyle contexts and sport. Research has shown that participants prefer to exercise and work in groups rather than alone (Heinzelmann and Bagley, 1970); that attendance is better in group-based versus individual-based programmes (Massi and Shephard, 1971); that adherence is influenced by both social support (Goodrick et al., 1981) and cohesion (Carron et al., 1988); and participants are better able to withstand potentially disruptive events in cohesive groups (Brawley et al., 1988). In short, the group has a substantial stabilizing influence on its membership.

Hence, to provide answers for the objective, the result

presented in Table 3 confirmed that there was a significant difference between the pre- and post-test for the respondents between the sub-scales of the GEQ. The results showed statistical significant difference between Attraction to the Group-Task (ATG-T), Attraction to the Group-Social (ATG-S) and Group Integration-Social (GI-T). As discussed in the previous section, the high scores for the task cohesion scales might reflect the fact that the teams' emphasis remained high in relation to team-related strategies and interaction after the camp. This is supported by Carron et al. (2002) who emphasized that excellence in the performance should make group members feel much better about the group and thus retain their team strategies and interaction. In comparing the results of the present study with those of Seat et al. (2000) in terms of the respondents' score in the post-test, it was found similar in the rank order of cohesion sub-scale. The results obtained in the study of Seat et al. (2000) revealed that the respondents increased cohesion in relation to the task done during the project; the treated group became more cohesive by midpoint and then maintained that level at a higher rate throughout the year. Their finding supported data results obtained in the present study.

In short, the overall sub-scale GEQ pre- and post-test scores for this camp indicated a statistically significant improvement in the respondent's group cohesion. Therefore, the present study has proven the Theory of Group Development is supported in term of improving team cohesion.

Conclusion

This study produced a substantial body of evidence supporting the efficacy of adventure-based activity as a valid and viable methodology for enhancing the team cohesion among participants who attended the National Service Training Programme. In addition, an unexpected, but more significant outcome of the intervention was positive and impacted the participants' experiences. Cohesiveness was developed among the participants during the physical module programme. As a final point, the present study has proved that the participants at the National Service Training Programme agreed on the development of team cohesion among themselves when they experience the physical training module through adventure-based activity. To conclude, the physical module curriculum at the National Service Training Programme has proven to be successful towards building cohesiveness among the participants. It is hoped that this programme will continually remain as a service programme among youths in Malaysia.

REFERENCES

Altman SR, Estes C, Tittle F (2006). Sexual orientation and team cohesion in women's intercollegiate basketball. *Larnet: The Cyber*

- Journal of Applied Leisure and Recreation Research.
- Baumgartner TA, Hensley LD (2006). *Conducting and reading research in health and performance* (4 ed.). New York: McGraw Hill.
- Bogner FX (2002). The influence of a residential outdoor education programme to pupil's environmental perception. *Eur. J. Psychol. Educ.* 17(1).
- Brawley LR, Carron AV, Widmeyer WN (1987). Assessing the cohesion of teams: Validity of the Group Environment Questionnaire. *J. Sport Psychol.* 9:275-294.
- Brawley LR, Carron AV, Widmeyer WN (1988). Exploring the relationship between cohesion and group resistance to disruption. *J. Sport Exerc. Psychol.* 10:199-213.
- Burke SM, Carron AV, Eys MA (2006). Physical activity context: Preferences of university students. *Psychol. Sport Exerc.* 7:1-13.
- Campbell DT, Hanna JM, Tice AL, Meyer BB (2000). Examining the effect of repeated exposure to a ropes course intervention: Methodological considerations. Paper presented at the Student Scientific Research Symposium, University of Winconsin.
- Carron AV, Brawley LR (2000). Cohesion: conceptual and measurement issues. *Small Group Res.* 31(1):89-106.
- Carron AV, Brawley AR, Widmeyer WN (1998). The measurement of cohesiveness in sport groups. *Adv. Sport Exerc. Psychol. Measure.* pp.213-226.
- Carron AV, Bray SR, Eys MA (2002). Team cohesion and team success in sport. *J. Sport Sci.* 20:119.
- Carron AV, Colman MM, Wheeler J (2002). Cohesion and performance in sport: A meta analysis. *J. Sport Exerc. Psychol.* 24(1).
- Carron AV, Widmeyer WN, Brawley LR (1985). The development of an instrument to assess cohesion in sport teams: the Group Environment Questionnaire. *J. Sport Psychol.* p.7.
- Carron AV (1988). *Group dynamics in sport*. London, ON: Sport Dynamics.
- Carron AV, Spink KA (1993). Team building in an exercise setting. *Sport Psychol.* 7(1):8-18.
- Carron AV, Widmeyer WN, Brawley LR (1988). Group cohesion and individual adherence to physical activity. *J. Sport Exerc. Psychol.* 10:127-138.
- Chang A, Bordia P (2006). A multi-dimensional approach to the group cohesion - group performance relationship. *Small Group Res.* 37(4).
- Courneya KS, McAuley E (1995). Cognitive mediators of the social influence-exercise adherence relationship: A test of the theory of planned behavior. *J. Behav. Med.* 18:499-515.
- Dishman R (1984). Motivation and exercise adherence. In: Silva JM & Weinberg RS (Eds.), *Psychological foundations of sport*, Champaign, IL: Human Kinetics pp.420-434.
- Escovar LA, Sim FM (1974). The cohesion of groups: Alternative conceptions. Paper presented at the meeting of the Canadian Sociology and Anthropology Association, Toronto, Ontario.
- Gatzemann T, Schweizer K, Hummel A (2008). Effectiveness of sports activities with an orientation on experiential education adventure-based learning and outdoor-education. *J. Exp. Educ.* 40(2).
- Goodrick GK, Warren DR, Hoepful JA, Hartung GM (1981). Helping adults to stay physically fit: Preventing relapse following aerobic exercise training. Unpublished manuscript, University of Houston.
- Heinzelmann F, Bagley PW (1970). Response to physical activity programs and their effect on health behavior. *Public Health Rep.* 86:905-911.
- Heuze JP, Raimbault N, Fontayne P (2006). Relationships between cohesion, collective efficacy, and performance in professional basketball teams: An examination of mediating effects. *J. Sports Sci.* 24:59-68.
- Hoyle RH, Crawford AM (1994). Use of individual-level data to investigate group phenomena: issues and strategies. *Small Group Res.* 25:464-485.
- Kamphoff CS, Gill DL, Huddleston S (2005). Jealousy in sport: Exploring jealousy's relationship to cohesion. *J. Appl. Sport Psychol.* p.17.
- King AC, Haskell WL, Taylor CB, DeBusk RF (1991). Group-vs. home-based exercise training in healthy older men and women. *J. Am. Med. Assoc.* 266:1535-1542.
- Landers DM, Luschen G (1974). Team performance outcome and cohesiveness of competitive coaching groups. *Int. Rev. Sport Sociol.* 9:57-69.
- Meyer BB (2000). The ropes and challenge course. A quasi experimental examination. *Percept. Motor Skills* 90:1249-1257.
- Meyer BB, Wenger MS (1998). Athletes and adventure education. An empirical investigation. *Int. J. Sport Psychol.* 29:243-266.
- Mugford AL, Tennant LK (2005). Flow in a team sport setting: Does cohesion matter? Unpublished Research. University of Kansas.
- Murphy JM (2001). Effect of a one time team building exercise on team cohesion when working with a NCAA division 1 women basketball team. University of North Carolina, North Carolina.
- Ntoumanis N, Aggelonidis Y (2004). A psychometric evaluation of the group environment questionnaire in a sample of elite and regional level Greek volleyball players. *Eur. Phys. Educ. Rev.* 10(3).
- Paskevich DM, Estabrooks PA, Brawley LR, Carron AV (2001). Group cohesion in sport and exercise. In *Handbook of Sport Psychology*, 2nd edn (edited by Singer RN, Hausenblas HA and Janelle CM), pp.472-494. New York: Wiley.
- Paskevich DM (1995). Conceptual and measurement factors of collective efficacy in its relationship to cohesion and performance outcome. Unpublished doctoral dissertation, University of Waterloo, Waterloo, ON.
- Schultz PW, Shriver C, Tabanico JJ, Khazian AM (2004). Implicit connections with nature. *J. Environ. Psychol.* p.24.
- Seat JEA, Poppen W, Boone K, Parsons JR (2000). Making design teams work. PhD. Thesis. University of Tennessee.
- Spink KS, Carron AV (1992). Group cohesion and adherence in exercise classes. *J. Sport Exerc. Psychol.* 14:78-96.
- Steer RM, Rhodes SR (1978). Main influences on employee attendance: A process model. *J. Appl. Psychol.* 63:391-407.
- Widmeyer WN, Brawley LR, Carron AV (Eds.). (1992). *Group cohesion in sport and exercise*. New York: MacMillan.
- Widmeyer WN, Williams JN (1991). Predicting cohesion in an interacting sport. *Small Group Res.* 22:548-570.
- Widmeyer WN, Brawley LR, Carron AV (1985). The measurement of cohesion in sport teams: The group environment questionnaire. London, Ontario: Sports Dynamics.