PSYCHOLOGICAL PREPAREDNESS OF SPECIAL MALAYSIA ASSISTANCE AND RESCUE TEAM (SMART) FOR DISASTER RESPONSE

By

MOHD B ABDULLAH

Project Report Submitted in Fulfillment of the Requirements for the Degree of Master of Science in Faculty of Engineering

Universiti Putra Malaysia

2000/2001

FK 2001 76

Abstract of project paper presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the degree of Master of Science.

PSIKOLOGICAL PREPAREDNESS OF SPECIAL MALAYSIA ASSISTANCE AND RESCUE TEAM (SMART) FOR DISASTER RESPONSE

By

MOHD BIN ABDULLAH

Nov 2001

Chairman: **Associate Professor Fakhru'I-Razi bin Ahmadun, Ph.D.**

Faculty: **Engineering.**

The rescue personnel deployed at the scene of disasters are susceptible to psychological consequences, which may affect the rescue team's response preparedness. SMART, being new to the search and rescue environment may also be subjected to these stressful consequences. This study is to determine the SMART's psychological preparedness based on Psychological Performance Profile developed by Asken (1993). The significant mean difference in psychological performance between the personnel of Bomba, Police and the Army that form the team is also identified. The study is also to evaluate the personnel perception of their level of confidence in performing various search and rescue operations. A total of 81 out of 85 SMART personnel were requested to complete questionnaires which was then analyzed using Statistical Package for

Social Sciences. Cronbach's Alpha was used to analyze the internal consistence reliability of the instrument. The mean of the psychological skill variables were tabulated and plotted on graph to determine the level of psychological preparedness.

The study reveals that the team only attains a fair level of psychological preparedness i.e. at the level of 'no commendations coming yet' (Asken 1993). There are also a slight difference in the mean of psychological performance and confidence in performing search and rescue operations between the personnel of the three departments that form the team.

Abstrak kertas projek yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenui keperluan untuk ijazah Master Sains.

KESEDIAAN PSIKOLOGI PASUKAN MENCARI DAN MENYELAMAT KHAS MALAYSIA (SMART) MENGHADAPI BENCANA

By

MOHD BIN ABDULLAH

Nov 2001

Pengerusi: Associate Professor Fakhru'l-Razi bin Ahmadun, Ph.D.

Fakulti: Engineering.

Terdapat kebimbangan di mana pasukan penyelamat yang di tugaskan ke kawasan bencana terdedah kepada tekanan psikologi yang boleh menjejaskan kesediaannya memberi respons. SMART yang baharu di dalam tugas mencari dan menyelamat juga terdedah kepada tekanan ini. Kajian ini akan menentukan kesediaan psikologi pasukan SMART berdasarkan Profil Prestasi Psikologi yand di cipta oleh Asken (1993). Perbezaan min dalam prestasi psikologi di antara pasukan Bomba, Polis dan Tentera yang menganggotai SMART juga di kenalpasti. Kajian ini juga menilai tahap keyakinan anggota SMART dalam melaksanakan operasi mencari dan menyelamat. Seramai 81 daripada 85 orang anggota SMART telah di minta menyempurakan borang kajiselidik yang kemudiannya di analisa menggunakan Statistical Package for Social Sciences (SPSS). Ujian Cronbach Alpa telah di

gunakan untuk menganalisa kebolehpercayaan kekalan dalaman alat kajian. Min pembolehubah kemahiran psikologi yang di perolehi akan menentukan melalui graf tahap kesediaan psikologi pasukan tersebut.

Kajian ini menunjukkan pasukan SMART mencapai tahap sederhana dalam kesediaan psikologi iaitu di tahap ' no commendations coming yet' mengikut Asken (1993). Terdapat juga perbezaan didalam min prestasi psikologi dan keyakinan dalam melaksanakan operasi di kalangan anggota tiga jabatan dalam SMART.

ACKNOWLEDGEMENTS

All praise be to Allah SWT who has given me the guidance and strength to complete this study amidst surmounting trials and challenges.

I am greatly indebted to Associate Professor Dr Fakhru'lRazi bin Ahmadun, and would like to express my sincere appreciation and gratitude for his patience, help, encouragement and advice. My heartfelt thanks to Puan Aini Mat Said, for her enthusiasm and guidance in the preparation of this project paper.

Having the opportunity to go through this study would not be possible without the selfless dedication of the program coordinator, Associate Professor Dr Mohamed Daud, Associate Professor Dr Nor Mariah and the lecturers and numerous other individuals who have make this program a success.

A very sincere appreciation also goes to PgB Jamil b Saadun, the SMART's commander for his priceless contributions in providing the relevant information, comments and the personnel for the study.

Last but not least, I am extremely grateful to everybody that has made this study possible through their advice and moral support, especially may friends, course mates and beloved wife and children.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATION

SMART	-	Special Malaysia Assistance and Rescue Team.
NSC	-	National Security Council
SAR	-	Search and rescue
CIS	-	Critical Incident Stress
HAZMAT	-	Hazardous material

APPENDICES

CHAPTER 1

INTRODUCTION

Disasters and Emergency Responders

Disasters affect people in many ways. The physical effects of a disaster are obvious. It does more than cause unexpected deaths, injuries, and illnesses. Homes, factories, livestock, and equipment are damaged or destroyed and, in some places, it cause large population movements. The emotional effects of disaster such as fear, acute anxiety, feelings of emotional numbness and grief may also affect the population. For many victims, these effects fade with time. However, for many others, there may be longer-term emotional effects, which may eventually cause long-lasting suffering, disability, and loss of income.

As part of the response effort to a disaster, emergency responders particularly the rescue teams, fire fighters, police officers, medical personnel, nurses, doctors, etc. are going to come into close, prolonged contact with the victims of the disaster. The effects of the devastation that a disaster brings to the community will cause an emotional stress reaction in the victims of the disaster. The emergency workers that are tasked to conduct search and recovery, extrication, medical treatment

and transportation to a receiving facility are going to become victims of this very same stress reaction.

Disasters in Malaysia

Malaysia has its share in experiencing a number of major accidents and disasters, due to either natural phenomenon or human negligence and weaknesses. These disasters, which had incurred heavy losses to lives and properties are:

1. The collapse of Sultan Abdul Halim Ferry Terminal at Butterworth, Pulau Pinang on 31 July 1998, which resulted in 32 death and 1674 others injured.
2. An explosion and fire that ruined a fireworks factory belonging to Bright Sparkles Sdn. Bhd. at Sungai Buloh, Selangor on 7 May 1991 causing 22 death and injuring 103 others.
3. Fire and explosion of a ship, Choon Hong III, at Kelang Port on 20 June 1992 causing 10 death. The fire posed an imminent danger of spreading as it was close to an oil depot of Shell Company.
4. The collapse of Highland Towers Condominium in Hulu Kelang, Selangor on 11 December 1993, where 48 people died.

5. A landslide at Km 34 feeder road to Genting Highlands, Pahang on 30 June 1995, where 20 people killed and 22 others injured.
6. A tourist bus plunged into a gorge of 120 meters deep at Km 1.5 Genting Highlands Road, Pahang on 15 July 1996, where 17 people were killed.
7. A sudden flood of mud smashed an Aborigines Settlement village at Dipang Post, Kampong Sahom, Mukim Kampar, Perak on 29 August 1996 that claimed 44 lives and destroying 30 houses.
8. A Tropical Storm 'Greg smashed West Coast Sabah on 26 December 1996, killing more than 230 people and destroyed 4925 houses.

Following to the tragedy at the Highland Towers Condominium, the government realized the need for a mechanism of command and control to handle disaster at the scene and a team specially trained and equipped for search and rescue. In a meeting on 18 May 1994, the Cabinet decided to form a mechanism of Major Inland Disaster Management under the National Security Division, of Prime Minister Department. This is later streamlined in the National Security Council (NSC) Directive No 20. Special Malaysia Disaster

Assistance and Rescue Team (SMART) was also formed as stipulated in NSC Directive No 19.

Malaysia's Search and Rescue Team

Special Malaysia Action Rescue Team (SMART) established in 1995 was formed as part of the response effort to disaster. SMART comprises of 85 officers and personnel from three main government departments i.e. the Fire and Rescue Department, Royal Malaysia Police and The Armed Forces. These personnel are specially selected, trained and equipped to conduct search and rescue operation. Detailed discussion on SMART's organization, roles and physical preparedness based on an interview with the SMART's commander, Fire Superintendent Jamil Saadun on 25 September 2001 is as Appendix A. According to Fire Supt. Jamil, the team has participated in a number of major disasters within the country as well as overseas. Among the incidents responded by SMART are:

- Extrication of bus accident victims at Genting Highland on 15 July 1996.
- Search and rescue for the victims of Tropical Storm 'Greg' in Keningau in December 1996.

- Forest fire fighting mission at Kalimatan and Sumatra in September 1997.
- International SAR mission for the earthquake victims at Golcuk, Turkey in August 1999.
- International SAR mission for the earthquake victim at Gujarat, India.

As any other responders, SMART's members are going to come into close, prolonged contact with the emotional stress of the victims of the disaster. This emotional stress reaction would eventually bear some effect on the team member's response preparedness.

Problem Statement

There is a growing concern that those rescue personnel deployed at scenes of disasters are susceptible to physical and health consequences (Dunning, 1988). Research conducted indicates that workers participating in disaster operations experience various levels of physical and psychological discomfort (Keating 1986).

Asken (1993) in his study among emergency responders discovered that between 25 to 60 percent of successful responders are due to psychological factors, that is being able to think clearly in a response situation, staying focused, etc; and the rest is attributed to physical skills such training, strength and endurance.

Though SMART personnel are selected and trained for physical preparedness but none of the training module so far, give emphasis on psychological preparedness. It is assumed that they are able to handle any stressful and traumatic response. This is due to the fact the team members do not display any noticeable symptom of psychological unprepared ness. Before any deployment, they are ensured to be physically fit, the required equipments are available and in good working order.

Objective of Study

The objective of the study is:

1. To assess the SMART's confidence in conducting various types of search and rescue (SAR) operations.
2. To determine whether the SMART is psychologically prepared for any type of response.

3. To determine whether there is any significant mean difference in psychological performance between the members from three main departments in the team.
4. To find whether there is any relationship between the levels of preparedness with age, education, rank, years of service, marriage and having children.

Significance of Study

Up to now, no study has been conducted to assess the preparedness of SMART either physically or psychologically. This study will be the initial assessment on the team psychological preparedness based on an instrument devised by Asken (1993), an American Health Psychologist. The findings and results would offer suggestion for further research and the formulation of appropriate training strategies to enhance the team's performance.

Scopes and Limitation

This study was conducted on 81 members of Special Malaysia Action Rescue Team that were present at the time of the research.

Another four SMART members were unavailable as they were away in Lumut, Perak attending a course.

This study was only assessing the team's level of psychological preparedness and its confidence in conducting various search rescue operations.

REFERENCES

Asken, M.J. 1993. *Psycheresponse – Psychological skills for optimal performance by emergency responders*. Pp 1-19. Englewood Cliffs, New Jersey: Prentice-Hall.

Brown, M.J and Campbell, E.A. 1994. *Stress and policing*. Pp 14-16.Chichester: John Wiley & Sons.

Dunning, C. 1988. *Intervention strategies for emergency workers. In Lystad, M. (Ed.), Mental Health response to mass emergencies*. Pp 284 – 304. New York: Bruner Mazel Publishers.

Farber IJ.1967. Psychological aspects of mass disasters. *Journal of the National Medical Association* 59:340-345.

Frease, M. 1985. Stress at work and psychosomatic complaints: a casual interpretation. *Journal of applied psychology*, 70,314-328.

Greenberg, J and Baron R.A. 1993. *Behaviour in organization*. Pp224-256. Boston: Allyn and Bacon.

Holmes, T.H., & Rahe, R. H., (1967) in Atkinson, R.L., Atkinson, R.C., Smith, E.E., Bem, D.J and Nolen-Hoeksema, S. 1996. *Hilgard's introduction to psychology*. Pp 480. Fort Worth: Harcourt Brace College Publishers.

Jamil Sadun. 2001. Personal communication on 25 September at his office, SMART Headquarters, PULAPOL, Kuala Lumpur.

Keating. J. 1986. Psychological aftereffects of emergency workers at Dallas fortworthworth air crash. Paper presented at the annual meeting of the Society for Traumatic Studies.

Lazarus, R.S and Folkman, S. 1984. *Stress, appraisal and coping*. New York: Springler.

Motowildo, S.J., Packard, J.S. and Manning, M.R., 1986. Occupational stress: Its causes and consequences for job performance. *Journal of Applied Psychology,* 71, 618-629.

Majlis Keselamatan Negara, 1997, Arahan No. 19 – Penubuhan Pasukan Mencari dan Menyelamat Khas Malaysia. Kuala Lumpur: Bahagian Keselamatan Negara.

Majlis Keselamatan Negara, 1997, Arahan No. 20 – Dasar dan Mekamisma Pengurusan dan Bantuan Bencana Negara. Kuala Lumpur: Bahagian Keselamatan Negara.

Mitchell, J and Bray, G. 1990. *Emergency services stress. Guideline for the preserving the health and careers of emergency services personnel.* Pp. 29. Englewood Cliffs, NJ: Prentice Hall

Nebraska Health and Human Services System. 2001. Recognizing Critical Incident Stress. http://www.hhs.state.ne.us/ems/emscism.htm.

Norwood, A.E., Ursano, R.J. & Fullerton.C.S. Disaster psychiatry: principles and practice. http://www.psyche.org/

Paton, D. Training disaster workers: promoting well-being and operational effectiveness. *Disaster Prevention and Management.* Vol 5 number 5 1996. Pp. 11-18

Raphael. 1986. in Paton, D. Training disaster workers: promoting well being and operational effectiveness. *Disaster Prevention and Management.* Vol 5 number 5 1996. Pp. 11-18

Selye, H (1976). *The stress of life* . New York: McGraw-Hill quoted in Bernstein, D.A., Roy, E.J. Srull, T.K. and Wickens, C.D. 1991. *Psychology* (2nd ed.) pp 501-511. Boston: Houghton Mifflin Company.

Selye, H (1956) in Greenberg, J and Baron R.A. 1993. *Behaviour in organization.* Pp224-256. Boston: Allyn and Bacon.

Tan, L.S. 2000. Psychological preparedness of bomba hazmat teams in west Malaysia, for emergency hazmat response. MSc (ERP) project paper. Universiti Putra Malaysia.

Zibulewsky, J. 2000. Defining disaster: the emergency department perspective. Paper presented at the pathology fall symposium, "Disaster and Emergency Management: Knowledge Gained, Experience Applied," at Baylor University Medical Center. November 2. *BUMC Proceedings* 2001; 14:144-149. http://www.baylorhealth.com/proceedings/