

**Enhancing the Coping Skills of
Submariners:
An Evaluation of the Effectiveness of
Skills Based
Stress Management Training**

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This thesis is presented for the degree of Doctor of Psychology (Clinical), Murdoch University, 2007.

Declaration

I declare that this thesis is my own account of my research and contains as its main content work which has not previously been submitted for a degree at any tertiary educational institution.

Cindy McDougall

2007

INFORMATION AND CONSENT SHEET

ENHANCING THE COPING SKILLS OF SUBMARINERS: AN EVALUATION OF THE EFFECTIVENESS OF SKILLS BASED STRESS MANAGEMENT TRAINING

WHAT IS THIS STUDY ALL ABOUT?:

This study is being conducted firstly to better understand the current potential stressors and the impact of stress on the health, work and non-work life satisfaction on COLLINS Class submariners. Secondly, it aims to identify current levels of perceived coping with these stressors and to provide submariners with a broader range of coping skills and techniques that can be implemented alongside and at sea. The benefits to be gained by the individual member are increased feelings of well-being, and the improvement of work and personal life. The benefits to be gained by the crew are the improvement of the reliability, commitment, and morale of the team. The longer-term goal is to offer this program on a regular basis throughout the year to provide RAN submariners with a resource for meeting the demanding stressors typically associated with working in Submarine Service.

YOUR PART IN THE STUDY:

- Participation in this study is voluntary. There is no obligation to take part in the study and if you choose not to participate there will be no detriment to your career or future health care. You may withdraw at any time with no detriment to your career or to your future health care. Data from your psychology file will be required for the purposes of this project only.
- The first component of this study involves a survey to identify current work related stressors, the factors that contribute to these, and the ways in which submariners cope with stressors in their lives. What will be required of you is to complete some brief questionnaires, checklists and rating forms (about 5-10 minutes each). These will need to be completed alongside and at sea on designated occasions. Surveys conducted alongside will be of approximately 30-40 minutes duration each. Those to be completed at sea will be of approximately 15 minutes each on two separate occasions. Everyone is encouraged to participate in this part of the study.
- The second component of this study involves an additional skills training phase. It will require you to attend 1.5 hour sessions twice a week for 4 weeks (12 hours total), and to monitor progress. The skills training will address issues of concern as identified by you in the survey component of the study. You will be provided with a range of techniques that can be implemented in your work and personal lives to address these issues. Smaller numbers are required for this part of the study and the training will be run in small groups whilst the boat is alongside.

RISKS OF PARTICIPATING:

This is a non-invasive study and there are no obvious risks involved in participating. If you experience distress as a result of participating in this study, you are advised to seek assistance through either: Maritime West Psychology (Gwenda Doherty - 9553 2582),

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Chaplains (9553 2456), DCO (9311 2310), and/or medical staff. If this occurs whilst at sea, you are advised to seek assistance through the MED, CISM member or your divisional staff onboard.

ON DUTY:

If you participate in this study you will be considered 'on duty' during participation.

STATEMENT OF PRIVACY:

Data from your psychology file will be required for the purposes of this project only. Data obtained from personnel will be stored under lock and key with access and handling strictly for researchers only. Any information collected will be treated confidentially and anonymity will be preserved in reports or published articles. Additionally, data collected for this study will be used for the purpose of this study only and no other, without your express permission. Research results will be made available to you at your request.

CONTACT DETAILS:

Should you have any complaints or concerns about the manner in which this project is conducted, or any questions, please do not hesitate to contact me in person at the following address:

Cindy Heffer
Maritime West Psychology
HMAS STIRLING WA 6958
Telephone: (08) 9553 2743
Fax: (08) 9553 2828
E-mail: Lucinda.Heffer@defence.gov.au

Murdoch University Research Ethics Committee (08) 9360 6677	Dr. Barbara Hewson-Bower Murdoch University (08) 9360 6828	Associate Professor Peter Drummond Murdoch University (08) 9360 2415
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Or you may prefer to contact the Australian Defence Human Research Ethics Committee at the following address:

Executive Secretary
Australian Defence Human Research Ethics Committee
CP2-7-66
Department of Defence
CANBERRA ACT 2600
Telephone: (02) 62663837 Fax: (02) 62664982
E-mail: ADHREC@defence.gov.au

Appendix A

CONSENT

I,..... give my consent to participate in of the project mentioned above on the following basis:

I have had explained to me the aims of this research project, how it will be conducted and my role in it.

I understand the risks involved as described above.

I understand that:

- participation in the study is entirely voluntary and there is no obligation to take part in the study;
- had I chosen not to participate there would be no detriment to my career or future health care; and
- I may withdraw at any time with no detriment to my career or to my future health care.

I am co-operating in this project on condition that:

- the information I provide will be kept confidential;
- the information will be used only for this project; and
- the research results will be made available to me at my request and any published reports of this study will preserve my anonymity.

I have been given a copy of the information/consent sheet, signed by me and by the Principal Researcher (Cindy Heffer) to keep. I give permission to the Principal Researcher to access my psychology file for research purposes.

Should I have any complaints or concerns about the manner in which this project is conducted I will contact the researchers in person, or contact the Australian Defence Human Research Ethics Committee at the following address:

Executive Secretary
Australian Defence Human Research Ethics Committee
CP2-7-66
Department of Defence
CANBERRA ACT 2600
Telephone: (02) 6266 3837 Fax: (02) 62664982 E-mail: ADHREC@defence.gov.au

I have also been given a copy of ADHREC's *Guidelines for Volunteers*.

.....
[subject] [date]

.....
[Principal Researcher] [date]

Appendix B

BIOGRAPHICAL DETAILS

Indicate your responses by ticking one option for each question (to the right of the correct response). To change an answer, put a cross through your initial response and tick the appropriate one.

This section seeks information on your background and current employment.

Q1. What is your current posting?

DECHAINEUX _____ SHEEAN _____ WALLER _____ RANKIN _____

Q2. Please indicate your gender

Male _____ Female _____

Q3. Please indicate your age (years and months) _____

Q4. Please indicate your marital status.

Single _____

Recognised defacto _____

Non-recognised defacto _____

Married _____

Divorced/separated _____

Widowed _____

Q5. Do you have any children?

Yes, please indicate how many _____ No _____

Q6. Highest level of education attained?

Secondary _____ Tertiary _____ TAFE _____ Post graduate _____

Q7. What is your current rank? _____

Q8. What is your current category? _____

Q9. What is your submariner status?

Trainee _____ Qualified _____

Q10. How long have you served in the RAN? _____

Q11. How long have you been a submariner? _____

Q12. How long have you been in your current posting? _____

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SECTION 2: YOUR PERCEPTIONS OF YOUR JOB

The following questions seek your opinion about your satisfaction with your job.

JOB SATISFACTION

Q1. How satisfied are you with your current job?

Very dissatisfied _____

Dissatisfied _____

Neither satisfied nor dissatisfied (go to Q3) _____

Satisfied (go to Q3) _____

Very satisfied (go to Q3) _____

Q2. If dissatisfied, what is the MAIN area of dissatisfaction? (TICK one option only)

Short notice and unpredictable changes to program _____

Boring or repetitive programs _____

Long working hours _____

Confined or physically difficult working conditions _____

Repetitive and boring tasks _____

Difficulties with major equipment or systems _____

Other (please specify below)

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MANPOWER AND WORKING HOURS

Please indicate the strength of your agreement or disagreement with the following statements using the 5-point scale. Circle your response. To change a response put a X through the incorrect response and circle the correct response.

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
Q3. Current manning levels mean I don't get enough shore time to recover-----	SD	D	ND/NA	A	SA
Q4. We have enough personnel to ensure the job gets done properly-----	SD	D	ND/NA	A	SA
Q5. I can't perform my job effectively due to current manning levels-----	SD	D	ND/NA	A	SA
Q6. In general, I am happy with my current working hours-----	SD	D	ND/NA	A	SA
Q7. I don't get to spend enough time with my Family and friends-----	SD	D	ND/NA	A	SA
Q8. Constant changes to the work schedule make it difficult to plan family or leisure activities-----	SD	D	ND/NA	A	SA
Q9. Working alongside gives me a break in my workload-----	SD	D	ND/NA	A	SA

TRAINING AND PREPARATION

	Very Poorly	Poorly	Adequately	Well	Very Well
Q10. Overall, how well prepared are you to meet operational requirements?-----	1	2	3	4	5
Q11. How well prepared were you for the technical or specialist aspects of your job?-----	1	2	3	4	5
Q12. How well prepared are you for lifestyle changes caused by your job?-----	1	2	3	4	5

Appendix B

JOB DEMANDS

Please rate the following job components in relation to your primary job/task on the scale to the right (circle your response). If you wish to change your response, place a X through the incorrect response and circle the correct response.

Primary job/task	Very Little	Little	Moderate	Much	Very Much
Q13. How much mental and perceptual activity is required? (e.g. thinking, deciding, calculating, remembering or searching)-----	1	2	3	4	5
Q14. How much physical activity was required? (e.g. pushing, pulling, lifting)-----	1	2	3	4	5
Q15. How much time pressure do you feel due to the rate or pace at which your tasks occur-----	1	2	3	4	5
Q16. How hard do you have to work (mentally and physically) to accomplish the goal of your job?-----	1	2	3	4	5
Q17. How insecure, discouraged, irate and annoyed do you feel while on the job?-----	1	2	3	4	5
Overall Job Performance	Very Poor	Poor	Average	Good	Very Good
Q18. How successful do you think you are at accomplishing the goal of your job?-----	1	2	3	4	5

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SECTION 3: YOUR HEALTH AND WELLBEING

The following questions refer to your health and general wellbeing.

Q1. How do you rate your current health?

Poor_____ Average_____ Good_____ Excellent_____

Q2. How many times have you attended the sick bay (at sea and alongside) in the past month? _____

GENERAL WELL BEING

Following is a list of various troubles and complaints people sometimes have. Please indicate whether or not you experienced any of these OVER THE PAST WEEK INCLUDING TODAY, by circling the appropriate number.

	None	A Little	Often	Very Often
Q3. Common cold or flu-----	1	2	3	4
Q4. Dizziness-----	1	2	3	4
Q5. General aches and pains-----	1	2	3	4
Q6. Hands sweat and feel damp and clammy-----	1	2	3	4
Q7. Headaches-----	1	2	3	4
Q8. Muscles twitch and tremble-----	1	2	3	4
Q9. Rapid heart beat (not while exercising)-----	1	2	3	4
Q10. Shortness of breath-----	1	2	3	4
Q11. Skin rashes-----	1	2	3	4
Q12. Upset stomach-----	1	2	3	4
Q13. Trouble sleeping-----	1	2	3	4
Q14. Depressed mood-----	1	2	3	4
Q15. Difficulty concentrating-----	1	2	3	4
Q16. Crying easily-----	1	2	3	4
Q17. Lack of appetite/loss of weight-----	1	2	3	4
Q18. Taking medication to sleep or calm down-----	1	2	3	4
Q19. Overly tired/lack of energy-----	1	2	3	4
Q20. Loss of interest in T.V., movies, news, friends-----	1	2	3	4
Q21. Feeling life is pointless, meaningless-----	1	2	3	4

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SECTION 4: YOUR VIEWS ON BEING A SUBMARINER

This section seeks your views on being a submariner and serving on COLLINS Class submarines. Please indicate the strength of your agreement or disagreement with the following statements using the 5-point scale.

	Strongly Agree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Q1. My crew works well as a team-----	SD	D	ND/NA	A	SA
Q2. COLLINS class submariners are perceived as the elite of the Navy-----	SD	D	ND/NA	A	SA
Q3. There is little teamwork and cooperation among our crew-----	SD	D	ND/NA	A	SA
Q4. My closest relationships are with the people I work with-----	SD	D	ND/NA	A	SA
Q5. The negative media focus on the COLLINS class makes working as a submariner less satisfying-----	SD	D	ND/NA	A	SA
Q6. The media attention given to the 'problems' on COLLINS is blown out of proportion-----	SD	D	ND/NA	A	SA
Q7. I believe the COLLINS class submarine does not meet all the safety requirements-----	SD	D	ND/NA	A	SA
Q8. I have no major concerns about my safety at sea-----	SD	D	ND/NA	A	SA
Q9. Working on COLLINS class submarines is mentally exhausting-----	SD	D	ND/NA	A	SA
Q10. Electronic monitoring of how I perform my job makes me nervous-----	SD	D	ND/NA	A	SA
Q11. I am able to remain focussed on my job while on duty-----	SD	D	ND/NA	A	SA
Q12. There is enough support alongside to maintain the submarines-----	SD	D	ND/NA	A	SA
Q13. The submarine squadron internal communication is effective and fosters teamwork-----	SD	D	ND/NA	A	SA
Q14. I often find out at the last moment about changes to work schedules-----	SD	D	ND/NA	A	SA
Q15. Being separated from my extended family (e.g. parents, siblings) makes it difficult to do my job-----	SD	D	ND/NA	A	SA
Q16. Being separated from my extended family (e.g. parents, siblings) makes it difficult to relax away from work-----	SD	D	ND/NA	A	SA
Q17. Being separated from long term friends makes it difficult to relax away from work-----	SD	D	ND/NA	A	SA
Q18. Being separated from my immediate family (partner, children) makes it difficult to do my job-----	SD	D	ND/NA	A	SA

Appendix B

BEHAVIOURAL HISTORY

Please answer the following questions by circling either Yes or No:

- | | | |
|--|-----|----|
| a. Have you ever been given a diagnosis of ADHD (Attention Deficit Hyperactivity Disorder)? | Yes | No |
| b. Do you suffer from obsessive-compulsive disorder? | Yes | No |
| c. Have you been exposed to a stressful event or situation (either short- or long-lasting) of an exceptionally threatening or catastrophic nature, which would be likely to cause pervasive distress in almost anyone? | Yes | No |

Please answer whether you have experienced any of the following (as a result of 'c') *within 6 months* of the stressful event occurring or of the end of a period of stress:

- | | | |
|---|-----|----|
| d. Have you experienced persistent remembering of 'reliving' of the stressor in intrusive 'flashbacks', vivid memories or recurring dreams, or in experiencing distress when exposed to circumstances resembling or associated with the stressor? | Yes | No |
| e. Do you avoid or prefer to avoid circumstances resembling or associated with the stressor which was not present before exposure to the stressor? | Yes | No |
| f. Have you experienced an inability to recall, either partially or completely, some important aspects of the period of exposure to the stressor? | Yes | No |
| g. Have you experienced persistent symptoms of increased psychological sensitivity and arousal (not present before exposure to the stressor), shown by: | | |
| (a) difficulty in falling or staying asleep | Yes | No |
| (b) irritability or outbursts of anger | Yes | No |
| (c) difficulty in concentrating | Yes | No |
| (d) hypervigilance | Yes | No |
| (e) exaggerated startle response | Yes | No |

Appendix C

DASS	Name:	Date:
<p>Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.</p> <p>The rating scale is as follows:</p> <p>0 Did not apply to me at all 1 Applied to me to some degree, or some of the time 2 Applied to me to a considerable degree, or a good part of time 3 Applied to me very much, or most of the time</p>		
1	I found myself getting upset by quite trivial things	0 1 2 3
2	I was aware of dryness of my mouth	0 1 2 3
3	I couldn't seem to experience any positive feeling at all	0 1 2 3
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0 1 2 3
5	I just couldn't seem to get going	0 1 2 3
6	I tended to over-react to situations	0 1 2 3
7	I had a feeling of shakiness (eg, legs going to give way)	0 1 2 3
8	I found it difficult to relax	0 1 2 3
9	I found myself in situations that made me so anxious I was most relieved when they ended	0 1 2 3
10	I felt that I had nothing to look forward to	0 1 2 3
11	I found myself getting upset rather easily	0 1 2 3
12	I felt that I was using a lot of nervous energy	0 1 2 3
13	I felt sad and depressed	0 1 2 3
14	I found myself getting impatient when I was delayed in any way (eg, lifts, traffic lights, being kept waiting)	0 1 2 3
15	I had a feeling of faintness	0 1 2 3
16	I felt that I had lost interest in just about everything	0 1 2 3
17	I felt I wasn't worth much as a person	0 1 2 3
18	I felt that I was rather touchy	0 1 2 3
19	I perspired noticeably (eg, hands sweaty) in the absence of high temperatures or physical exertion	0 1 2 3
20	I felt scared without any good reason	0 1 2 3
21	I felt that life wasn't worthwhile	0 1 2 3

Appendix C

<i>Reminder of rating scale:</i>					
0	Did not apply to me at all				
1	Applied to me to some degree, or some of the time				
2	Applied to me a considerable degree, or a good part of time				
3	Applied to me very much, or most of the time				
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22	I found it hard to wind down	0	1	2	3
23	I had difficulty in swallowing	0	1	2	3
24	I couldn't seem to get any enjoyment out of the things I did	0	1	2	3
25	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3
26	I felt down-hearted and blue	0	1	2	3
27	I found that I was very irritable	0	1	2	3
28	I felt that I was close to panic	0	1	2	3
29	I found it hard to calm down after something upset me	0	1	2	3
30	I feared that I would be "thrown" by some trivial but unfamiliar task	0	1	2	3
31	I was unable to become enthusiastic about anything	0	1	2	3
32	I found it difficult to tolerate interruptions to what I was doing	0	1	2	3
33	I was in a state of nervous tension	0	1	2	3
34	I felt I was pretty worthless	0	1	2	3
35	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
36	I felt terrified	0	1	2	3
37	I could see nothing in the future to be hopeful about	0	1	2	3
38	I felt that life was meaningless	0	1	2	3
39	I found myself getting agitated	0	1	2	3
40	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
41	I experienced trembling (eg, in the hands)	0	1	2	3
42	I found it difficult to work up the initiative to do things	0	1	2	3

OSI-R

DIRECTIONS

The following sections (ORQ, PSQ, & PRQ) contain questions about work situations and individual habits. Be sure to respond to all of the statements.

Read each statement carefully. For each statement, circle the number which fits you best.

Circle (1) if the statement is *rarely* or *never* true.

Circle (2) if the statement is *occasionally* true.

Circle (3) if the statement is *often* true.

Circle (4) if the statement is *usually* true.

Circle (5) if the statement is true *most of the time*.

For example, if you believe that a statement is often true about you, you would circle the 3 to the right of that statement.

Example
1 2 3 4 5

Circle only one number for each statement. Be sure to rate ALL of the statements. DO NOT ERASE!

If you need to change an answer, make an "X" through the incorrect response and then circle the correct number, like this:

Example
1 2 3 4 5

If a statement is not applicable, please mark (1) *rarely* or *never* true.

ORQ

	Rarely or never true	Occasionally true	Often true	Usually true	True most of the time
1. At work I am expected to do too many different tasks in too little time.	1	2	3	4	5
2. I feel that my job responsibilities are increasing.	1	2	3	4	5
3. I am expected to perform tasks on my job for which I have never been trained.	1	2	3	4	5
4. I have to take work home with me.	1	2	3	4	5
5. I have the resources I need to get my job done.	1	2	3	4	5
6. I'm good at my job.	1	2	3	4	5
7. I work under tight time deadlines.	1	2	3	4	5
8. I wish that I had more help to deal with the demands placed upon me at work.	1	2	3	4	5
9. My job requires me to work in several equally important areas at once.	1	2	3	4	5
10. I am expected to do more work than is reasonable.	1	2	3	4	5
<hr style="border: 1px solid black;"/>					
11. My career is progressing about as I hoped it would.	1	2	3	4	5
12. My job fits my skills and interests.	1	2	3	4	5
13. I am bored with my job.	1	2	3	4	5
14. I feel I have enough responsibility on my job.	1	2	3	4	5
15. My talents are being used on my job.	1	2	3	4	5
16. My job has a good future.	1	2	3	4	5
17. I am able to satisfy my needs for success and recognition in my job.	1	2	3	4	5
18. I feel overqualified for my job.	1	2	3	4	5
19. I learn new skills in my work.	1	2	3	4	5
20. I have to perform tasks that are beneath my ability.	1	2	3	4	5

	Rarely or never true	Occasionally true	Often true	Usually true	True most of the time
21. My supervisor provides me with useful feedback about my performance.	1	2	3	4	5
22. It is clear to me what I have to do to get ahead.	1	2	3	4	5
23. I am uncertain about what I am supposed to accomplish in my work.	1	2	3	4	5
24. When faced with several tasks I know which should be done first.	1	2	3	4	5
25. I know where to begin a new project when it is assigned to me.	1	2	3	4	5
26. My supervisor asks for one thing, but really wants another.	1	2	3	4	5
27. I understand what is acceptable personal behaviour on my job (e.g. dress, interpersonal relations, etc.).	1	2	3	4	5
28. The priorities of my job are clear to me.	1	2	3	4	5
29. I have a clear understanding of how my boss wants me to spend my time.	1	2	3	4	5
30. I know the basis on which I am evaluated.	1	2	3	4	5
<hr/>					
31. I feel conflict between what my employer expects me to do and what I think is right or proper.	1	2	3	4	5
32. I feel caught between factions at work.	1	2	3	4	5
33. I have more than one person telling me what to do.	1	2	3	4	5
34. I know where I fit in my organization.	1	2	3	4	5
35. I feel good about the work I do.	1	2	3	4	5
36. My supervisors have conflicting ideas about what I should be doing.	1	2	3	4	5
37. My job requires working with individuals from several departments or work areas.	1	2	3	4	5
38. It is clear who really runs things where I work.	1	2	3	4	5
39. I have divided loyalties on my job.	1	2	3	4	5
40. I frequently disagree with individuals from other work units or departments.	1	2	3	4	5

	Rarely or never true	Occasionally true	Often true	Usually true	True most of the time
41. I deal with more people during the day than I prefer.	1	2	3	4	5
42. I spend time concerned with the problems others at work bring to me.	1	2	3	4	5
43. I am responsible for the welfare of subordinates.	1	2	3	4	5
44. People on-the-job look to me for leadership.	1	2	3	4	5
45. I have on-the-job responsibility for the activities of others.	1	2	3	4	5
46. I worry about whether the people who work for/with me will get things done properly.	1	2	3	4	5
47. My job requires me to make important decisions.	1	2	3	4	5
48. If I make a mistake in my work, the consequences for others can be pretty bad.	1	2	3	4	5
49. I worry about meeting my job responsibilities.	1	2	3	4	5
50. I like the people I work with.	1	2	3	4	5
<hr/>					
51. On my job I am exposed to high levels of noise.	1	2	3	4	5
52. On my job I am exposed to high levels of wetness.	1	2	3	4	5
53. On my job I am exposed to high levels of dust.	1	2	3	4	5
54. On my job I am exposed to temperature extremes.	1	2	3	4	5
55. On my job I am exposed to bright light.	1	2	3	4	5
56. My job is physically dangerous.	1	2	3	4	5
57. I have an erratic work schedule.	1	2	3	4	5
58. I work all be myself.	1	2	3	4	5
59. On my job I am exposed to unpleasant odours.	1	2	3	4	5
60. On my job I am exposed to poisonous substances.	1	2	3	4	5

PSQ

	Rarely or never true	Occasionally true	Often true	Usually true	True most of the time
1. I don't seem to be able to get much done at work.	1	2	3	4	5
2. Lately, I dread going to work.	1	2	3	4	5
3. I am bored with my work.	1	2	3	4	5
4. I find myself getting behind in my work, lately.	1	2	3	4	5
5. I have accidents on the job of late.	1	2	3	4	5
6. The quality of my work is good.	1	2	3	4	5
7. Recently, I have been absent from work.	1	2	3	4	5
8. I find my work interesting and/or exciting.	1	2	3	4	5
9. I can concentrate on the things I need to at work.	1	2	3	4	5
10. I make errors or mistakes in my work.	1	2	3	4	5
<hr/>					
11. Lately, I am easily irritated.	1	2	3	4	5
12. Lately, I have been depressed.	1	2	3	4	5
13. Lately, I have been feeling anxious.	1	2	3	4	5
14. I have been happy, lately.	1	2	3	4	5
15. So many thoughts run through my head at night that I have trouble falling asleep.	1	2	3	4	5
16. Lately, I respond badly in situations that normally wouldn't bother me.	1	2	3	4	5
17. I find myself complaining about little things.	1	2	3	4	5
18. Lately, I have been worrying.	1	2	3	4	5
19. I have a good sense of humour.	1	2	3	4	5
20. Things are going about as they should.	1	2	3	4	5

	Rarely or never true	Occasionally true	Often true	Usually true	True most of the time
21. I wish I had more time to spend with close friends.	1	2	3	4	5
22. I often quarrel with the person closest to me.	1	2	3	4	5
23. I often argue with friends.	1	2	3	4	5
24. My spouse and I are happy together.	1	2	3	4	5
25. Lately, I do things by myself instead of with other people.	1	2	3	4	5
26. I quarrel with members of the family.	1	2	3	4	5
27. Lately, my relationships with people are good.	1	2	3	4	5
28. I find that I need time to myself to work out my problems.	1	2	3	4	5
29. Lately, I am worried about how others at work view me.	1	2	3	4	5
30. I have been withdrawing from people lately.	1	2	3	4	5

31. I have unplanned weight gains.	1	2	3	4	5
32. My eating habits are erratic.	1	2	3	4	5
33. I find myself drinking a lot lately.	1	2	3	4	5
34. Lately, I have been tired.	1	2	3	4	5
35. I have been feeling tense.	1	2	3	4	5
36. I have trouble falling and staying asleep.	1	2	3	4	5
37. I have aches and pains I cannot explain.	1	2	3	4	5
38. I eat the wrong foods.	1	2	3	4	5
39. I feel well.	1	2	3	4	5
40. I have lots of energy lately.	1	2	3	4	5

PRQ

	Rarely or never true	Occasionally true	Often true	Usually true	True most of the time
1. When I need a vacation I take one.	1	2	3	4	5
2. I am able to do what I want to do in my free time.	1	2	3	4	5
3. On weekends I spend time doing the things I enjoy most.	1	2	3	4	5
4. I hardly ever watch television.	1	2	3	4	5
5. A lot of my free time is spent attending performances (e.g. sporting events, theatre, movies, concerts, etc.).	1	2	3	4	5
6. I spend a lot of my free time in participant activities (e.g. sports, music, painting, woodworking, sewing, etc.).	1	2	3	4	5
7. I set aside time to do the things I really enjoy.	1	2	3	4	5
8. When I'm relaxing, I frequently think about work.	1	2	3	4	5
9. I spend enough time in recreational activities to satisfy my needs.	1	2	3	4	5
10. I spend a lot of my free time on hobbies (e.g. collections of various kinds, etc.).	1	2	3	4	5
<hr/>					
11. I am careful about my diet (e.g. eating regularly, moderately, and with good nutrition in mind).	1	2	3	4	5
12. I get regular physical checkups.	1	2	3	4	5
13. I avoid excessive use of alcohol.	1	2	3	4	5
14. I exercise regularly (at least 20 minutes, 3 times a week).	1	2	3	4	5
15. I practice "relaxation" techniques.	1	2	3	4	5
16. I get the sleep I need.	1	2	3	4	5
17. I avoid eating or drinking things I know are unhealthy (e.g. coffee, tea, cigarettes, etc).	1	2	3	4	5
18. I engage in meditation.	1	2	3	4	5
19. I practice deep breathing exercises a few minutes several times each day.	1	2	3	4	5
20. I floss my teeth regularly.	1	2	3	4	5

	Rarely or never true	Occasionally true	Often true	Usually true	True most of the time
21. There is at least one person important to me who values me.	1	2	3	4	5
22. I have help with tasks around the house.	1	2	3	4	5
23. I have help with the important things that have to be done.	1	2	3	4	5
24. There is at least one sympathetic person with whom I can discuss my concerns.	1	2	3	4	5
25. There is at least one sympathetic person with whom I can discuss my work problems.	1	2	3	4	5
26. I feel I have at least one good friend I can count on.	1	2	3	4	5
27. I feel loved.	1	2	3	4	5
28. There is a person with whom I feel really close.	1	2	3	4	5
29. I have a circle of friends who value me.	1	2	3	4	5
30. If I need help at work, I know who to approach.	1	2	3	4	5
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31. I am able to put my job out of my mind when I go home.	1	2	3	4	5
32. I feel that there are other jobs I could do besides my current one.	1	2	3	4	5
33. I periodically reexamine or reorganize my work style and schedule.	1	2	3	4	5
34. I can establish priorities for the use of my time.	1	2	3	4	5
35. Once they are set, I am able to stick to my priorities.	1	2	3	4	5
36. I have techniques to help avoid being distracted.	1	2	3	4	5
37. I can identify important elements of problems I encounter.	1	2	3	4	5
38. When faced with a problem I use a systematic approach.	1	2	3	4	5
39. When faced with the need to make a decision I try to think through the consequences of choices I might make.	1	2	3	4	5
40. I try to keep aware of important ways I behave and things I do.	1	2	3	4	5

Appendix E

SCCL

Stress may be encountered in every workplace. Submarine Service in particular has additional and unique stressors. It is important to know the types of stressors that are pertinent to you in the current climate in order to determine potential areas for organisational change and/or individual assistance.

Below are a list of areas in which people may experience stress in their work and personal lives, and examples of the possible causes of that stress.

As you complete the questionnaire please think about your work situation OVER THE PAST TWO WEEKS AT SEA/ALONGSIDE and complete the steps below:

- (1) Give each item a rating from 0 to 10, with 10 being the highest, to indicate how stressful it was, as experienced by you. Indicate your rating in the first column to the right of each item under the heading **STRESS RATING**, and,
- (2) Give yourself a coping score from 0 to 10, with 10 being the highest, to indicate how well you think you coped with each item. Indicate your rating in the second column to the right of each item under the heading **COPING SCORE**, and,
- (3) For each item, indicate whether or not you see it as a problem for you by circling either Yes (Y) or No (N) in the third column to the right of each item under the heading **IS THIS A PROBLEM FOR YOU**.

If you did not encounter a particular 'stressor' over the past two weeks then write N/A (not applicable) in the rating columns next to that example.

There is also a heading labelled **OTHER** for you to add any additional stressors you experienced over the past two weeks at sea/alongside. Complete the same ratings for each of the items you list.

Appendix E

	STRESS RATING (0-10)	COPING SCORE (0-10)	IS THIS A PROBLEM
Job-Specific Stress			
Work overload-----	_____	_____	Y / N
Work underload-----	_____	_____	Y / N
Long work hours-----	_____	_____	Y / N
Lack of sense of job control-----	_____	_____	Y / N
New technology-----	_____	_____	Y / N
Procedural changes-----	_____	_____	Y / N
Job complexity-----	_____	_____	Y / N
Concern over operational capability-----	_____	_____	Y / N
Lack of free time in port-----	_____	_____	Y / N
Watchkeeping system-----	_____	_____	Y / N
Personnel shortages-----	_____	_____	Y / N
 Role Stress			
Role ambiguity (unclear what your role is)-	_____	_____	Y / N
Role conflict ('too many hats' to wear)-----	_____	_____	Y / N
Unpredictability (e.g. changes to routines, program)-----	_____	_____	Y / N
Too much responsibility-----	_____	_____	Y / N
Not enough responsibility-----	_____	_____	Y / N
Boredom (monotonous routine)-----	_____	_____	Y / N
Lack of task variety-----	_____	_____	Y / N
 Interpersonal Stress			
Interpersonal conflict			
(e.g. supervisors, work colleagues)-----	_____	_____	Y / N
Poor work and social support systems-----	_____	_____	Y / N
Low morale-----	_____	_____	Y / N
Lack of management care/concern-----	_____	_____	Y / N
Social isolation (e.g. feeling excluded from the crew)-----	_____	_____	Y / N

Appendix E

	STRESS RATING (0-10)	COPING SCORE (0-10)	IS THIS A PROBLEM
Career Development			
Job insecurity-----	_____	_____	Y / N
Frustrated ambitions-----	_____	_____	Y / N
Lack of promotional or advancement opportunities-----	_____	_____	Y / N
Lack of recognition for your efforts-----	_____	_____	Y / N
Lack of job satisfaction-----	_____	_____	Y / N
 Organisational Structure and Development			
Inadequate supervision-----	_____	_____	Y / N
Restrictions on behaviour-----	_____	_____	Y / N
Rigidity-----	_____	_____	Y / N
Lack of participation in decision-making---	_____	_____	Y / N
 Home-Work Conflict			
Lack of support from spouse-----	_____	_____	Y / N
Marital conflict-----	_____	_____	Y / N
Dual-career stress-----	_____	_____	Y / N
Separation from family and friends-----	_____	_____	Y / N
 Environmental Conditions			
Lack of day-night cues-----	_____	_____	Y / N
Noise-----	_____	_____	Y / N
Confined/isolated conditions-----	_____	_____	Y / N
Heat-----	_____	_____	Y / N
Lack of privacy-----	_____	_____	Y / N
Uncomfortable working/living conditions--	_____	_____	Y / N
Danger-----	_____	_____	Y / N
Sleep disturbances-----	_____	_____	Y / N
 Other			
-----	_____	_____	Y / N

Appendix F

Stress and Coping Checklist Findings

Subjects were asked to rate on a scale from 0-10, a number of factors linked to work stress according to how stressful it was for them, how well they believed they coped with it, and then indicate whether or not it was a problem for them. Work stress factors were categorised under ‘Job-Specific Stress’, ‘Role Stress’, ‘Interpersonal Stress’, ‘Career Development’, ‘Organisational Structure and Development’, ‘Home-Work Conflict’, and ‘Environmental Conditions’. An ‘Other’ category was also provided. This questionnaire was used as a clinical tool with intervention subjects to identify priority problems to work on during the skills training. Priority problems were identified as those items with high stress ratings arbitrarily defined as a score of 6 or more out of 10. Mean values for each of the item ratings, and frequency of items being identified as a problem by the total sample group at Baseline Sea are presented in Tables F1 – F7.

Table F1

Descriptive Findings for Job-Specific Stress Items Baseline Sea

Work Stress Factor	Stress Rating (Mean) 0 = None; 10 = Highest	Coping Score (Mean) 0 = None; 10 = Highest	Problem Rating ‘Yes’ Frequency (%)
Job-Specific Stress			
Work overload	5.85	7.64	16 (21.33%)
Work underload	2.30	7.96	3 (4%)
Long work hours	6.55	7.0	24 (32%)
Lack of sense of job control	4.56	7.18	12 (16%)
New technology	3.56	7.81	6 (8%)
Procedural changes	3.86	7.62	6 (8%)
Job complexity	4.88	7.46	6 (8%)
Concern over operational capability	4.97	7.52	13 (17.33%)
Lack of free time in port	6.22	6.54	26 (34.66%)
Watchkeeping system	4.77	7.43	12 (16%)
Personnel shortages	6.30	7.0	34 (45.33%)

Table F2**Descriptive Findings for Role Stress Items Baseline Sea**

Work Stress Factor	Stress Rating (Mean) 0 = None; 10 = Highest	Coping Score (Mean) 0 = None; 10 = Highest	Problem Rating 'Yes' Frequency (%)
Role Stress			
Role ambiguity	2.91	8.0	3 (4%)
Role conflict	4.34	7.44	15 (20%)
Unpredictability	5.93	7.05	25 (33.33%)
Too much responsibility	3.83	7.58	5 (6.66%)
Not enough responsibility	2.70	8.21	6 (8%)
Boredom	4.71	7.48	16 (21.33%)
Lack of task variety	4.05	7.69	11 (14.66%)

Table F3**Descriptive Findings for Interpersonal Stress Items Baseline Sea**

Work Stress Factor	Stress Rating (Mean) 0 = None; 10 = Highest	Coping Score (Mean) 0 = None; 10 = Highest	Problem Rating 'Yes' Frequency (%)
Interpersonal Stress			
Interpersonal conflict	4.63	7.0	15 (20%)
Poor work and social support systems	4.18	7.11	12 (16%)
Low morale	4.19	7.37	15 (20%)
Lack of management care/concern	3.69	7.41	17 (22.66%)
Social isolation	2.68	7.61	5 (6.66%)

Table F4**Descriptive Findings for Career Development Items Baseline Sea**

Work Stress Factor	Stress Rating (Mean) 0 = None; 10 = Highest	Coping Score (Mean) 0 = None; 10 = Highest	Problem Rating 'Yes' Frequency (%)
Career Development			
Job insecurity	2.14	8.14	2 (2.66%)
Frustrated ambitions	4.08	7.59	15 (20%)
Lack of promotional or advancement opportunities	4.36	7.78	18 (24%)
Lack of recognition for your efforts	4.35	7.45	13 (17.33%)
Lack of job satisfaction	4.43	7.51	19 (25.33%)

Table F5**Descriptive Findings for Organisational Structure and Development Items Baseline Sea**

Work Stress Factor	Stress Rating (Mean) 0 = None; 10 = Highest	Coping Score (Mean) 0 = None; 10 = Highest	Problem Rating 'Yes' Frequency (%)
Organisational Structure and Development			
Inadequate supervision	2.22	8.2	2 (2.66%)
Restrictions on behaviour	2.72	8.19	3 (4%)
Rigidity	3.24	7.57	2 (2.66%)
Lack of participation in decision-making	3.5	7.45	11 (14.66%)

Table F6**Descriptive Findings for Home-Work Conflict Items Baseline Sea**

Work Stress Factor	Stress Rating (Mean) 0 = None; 10 = Highest	Coping Score (Mean) 0 = None; 10 = Highest	Problem Rating 'Yes' Frequency (%)
Home-Work Conflict			
Lack of support from spouse	3.0	7.85	6 (8%)
Marital conflict	2.92	7.5	9 (12%)
Dual-career stress	2.64	8.2	4 (5.33%)
Separation from family and friends	6.61	6.4	32 (42.66%)

Table F7**Descriptive Findings for Environmental Conditions Items Baseline Sea**

Work Stress Factor	Stress Rating (Mean) 0 = None; 10 = Highest	Coping Score (Mean) 0 = None; 10 = Highest	Problem Rating 'Yes' Frequency (%)
Environmental Conditions			
Lack of day-night cues	2.62	7.96	3 (4%)
Noise	3.16	7.96	2 (2.66%)
Confined/isolated conditions	3.43	7.85	7 (9.33%)
Heat	2.83	8.25	3 (4%)
Lack of privacy	3.66	7.96	6 (8%)
Uncomfortable working/living conditions	4.22	7.56	11 (14.66%)
Danger	4.29	7.55	10 (13.33%)
Sleep disturbances	5.57	6.68	5 (6.66%)

The findings for the Baseline Alongside ratings for the total sample are reported in Tables F8 – F14.

Table F8

Descriptive Findings for Job-Specific Stress Baseline Items Alongside

Work Stress Factor	Stress Rating (Mean) 0 = None; 10 = Highest	Coping Score (Mean) 0 = None; 10 = Highest	Problem Rating 'Yes' Frequency (%)
Job-Specific Stress			
Work overload	5.4	7.04	10 (17.86%)
Work underload	2.0	8.32	0 (0%)
Long work hours	3.54	7.17	11 (19.64%)
Lack of sense of job control	4.2	7.0	6 (10.71%)
New technology	3.35	7.53	5 (8.93%)
Procedural changes	3.54	7.70	4 (7.14%)
Job complexity	4.2	7.57	3 (5.36%)
Concern over operational capability	3.93	7.54	8 (14.28%)
Lack of free time in port	5.13	6.65	14 (25%)
Watchkeeping system	4.37	7.11	10 (17.86%)
Personnel shortages	4.89	7.04	17 (30.36%)

Table F9

Descriptive Findings for Role Stress Items Baseline Alongside

Work Stress Factor	Stress Rating (Mean) 0 = None; 10 = Highest	Coping Score (Mean) 0 = None; 10 = Highest	Problem Rating 'Yes' Frequency (%)
Role Stress			
Role ambiguity	3.27	7.77	4 (7.14%)
Role conflict	4.24	7.40	9 (16.07%)
Unpredictability	4.67	6.56	12 (21.43%)
Too much responsibility	3.87	7.32	6 (10.71%)
Not enough responsibility	2.60	8.07	1 (17.86%)
Boredom	3.37	7.46	3 (5.36%)
Lack of task variety	3.07	7.72	3 (5.36%)

Table F10**Descriptive Findings for Interpersonal Stress Items Baseline Alongside**

Work Stress Factor	Stress Rating (Mean) 0 = None; 10 = Highest	Coping Score (Mean) 0 = None; 10 = Highest	Problem Rating 'Yes' Frequency (%)
Interpersonal Stress			
Interpersonal conflict	3.59	7.68	3 (5.36%)
Poor work and social support systems	3.36	7.52	4 (7.14%)
Low morale	3.33	7.64	6 (10.71%)
Lack of management care/concern	3.79	7.13	9 (16.07%)
Social isolation	2.83	7.83	4 (7.14%)

Table F11**Descriptive Findings for Career Development Items Baseline Alongside**

Work Stress Factor	Stress Rating (Mean) 0 = None; 10 = Highest	Coping Score (Mean) 0 = None; 10 = Highest	Problem Rating 'Yes' Frequency (%)
Career Development			
Job insecurity	1.86	8.27	1 (17.86%)
Frustrated ambitions	3.55	7.33	5 (8.93%)
Lack of promotional or advancement opportunities	4.25	7.18	8 (14.28%)
Lack of recognition for your efforts	4.71	6.95	9 (16.07%)
Lack of job satisfaction	4.27	7.18	7 (12.5%)

Table F12**Descriptive Findings for Organisational Structure and Development Items Baseline Alongside**

Work Stress Factor	Stress Rating (Mean) 0 = None; 10 = Highest	Coping Score (Mean) 0 = None; 10 = Highest	Problem Rating 'Yes' Frequency (%)
Organisational Structure and Development			
Inadequate supervision	2.53	7.72	3 (5.36%)
Restrictions on behaviour	2.43	7.91	2 (3.57%)
Rigidity	2.55	7.69	2 (3.57%)
Lack of participation in decision-making	3.26	7.15	4 (7.14%)

Table F13**Descriptive Findings for Home-Work Conflict Items Baseline Alongside**

Work Stress Factor	Stress Rating (Mean) 0 = None; 10 = Highest	Coping Score (Mean) 0 = None; 10 = Highest	Problem Rating 'Yes' Frequency (%)
Home-Work Conflict			
Lack of support from spouse	2.06	8.09	2 (3.57%)
Marital conflict	2.31	8.10	4 (7.14%)
Dual-career stress	2.60	8.18	5 (8.93%)
Separation from family and friends	4.64	6.80	14 (25%)

Table F14**Descriptive Findings for Environmental Conditions Items Baseline Alongside**

Work Stress Factor	Stress Rating (Mean) 0 = None; 10 = Highest	Coping Score (Mean) 0 = None; 10 = Highest	Problem Rating 'Yes' Frequency (%)
Environmental Conditions			
Lack of day-night cues	2.22	8.0	0 (0%)
Noise	2.90	7.83	4 (7.14%)
Confined/isolated conditions	2.70	7.90	7 (12.5%)
Heat	2.52	8.19	2 (3.57%)
Lack of privacy	2.85	8.07	3 (5.36%)
Uncomfortable working/living conditions	3.14	7.74	5 (8.95%)
Danger	3.62	7.35	6 (10.71%)
Sleep disturbances	4.27	7.11	10 (17.86%)

Of note, the items with the highest percentage ratings of being a problem for personnel at sea were: personnel shortages, lack of free time in port, long work hours, unpredictability, and separation from family and friends. Each of these items was rated as a problem by more than 30% of personnel. Whilst alongside, the only problem rated by more than 30% of personnel as a problem was personnel shortages. However, the same problems were rated highly at both measurement points with problems alongside rated by more than 20% of personnel being: lack of free time in port, unpredictability, and separation from family and friends. Interestingly, sleep disturbances increased as a problem for personnel from 6% to nearly 18% when

alongside. This could be the result of disruptions to routine and additional home pressures and responsibilities.

During the skills training, subjects monitored their priority problems to reduce their stress ratings, and increase their coping scores to at least 8 out of 10. Monitoring of these problems was recorded on the Learning to Cope with Stress worksheets in their Workbooks (Appendix K).

Appendix G

ENHANCING THE COPING SKILLS OF SUBMARINERS: AN EVALUATION OF THE EFFECTIVENESS OF SKILLS BASED STRESS MANAGEMENT TRAINING

VOLUNTEERS WANTED!!!

WHAT'S THIS STUDY ALL ABOUT?

Submariners are required to face a range of unusual and arduous stressors in their everyday working environments. Research has shown that they are generally resilient but that conventional coping techniques (such as exercise, diet and social support) cannot be utilised within this unique environment.

This study aims to provide submariners with a broader range of skills and techniques that can be implemented alongside and at sea.

BENEFITS TO YOU!

The benefits to be gained by the individual member are the reduction of the negative impact of stress, the increase of feelings of well-being, and the improvement of work and personal life. The benefits to be gained by the crew are the improvement of the reliability, commitment, and operational effectiveness of the team. The longer-term goal is to offer this program on a regular basis throughout the year to provide RAN submariners with a resource for meeting the demanding stressors typically associated with working in Submarine Service.

WHO DO I CONTACT?

This study will be conducted in 2003 with the Submarine Squadron. If you are interested in participating and would like more information, you can contact me via the details provided below:

Cindy Heffer

E-mail: Lucinda.Heffer@defence.gov.au

Phone: 9553 2616

APPENDIX H

HEALTH AND HUMAN PERFORMANCE RESEARCH IN THE AUSTRALIAN DEFENCE ORGANISATION

GUIDELINES FOR VOLUNTEERS

AUSTRALIAN DEFENCE HUMAN RESEARCH ETHICS COMMITTEE

GUIDELINES FOR VOLUNTEERS

Thank you for taking part in Defence Research. Your involvement is much appreciated. This pamphlet explains your rights as a volunteer.

What is ADHREC?

- ADHREC is the Australian Defence Human Research Ethics Committee. It was established in 1988, as the Australian Defence Medical Ethics Committee (ADMEC), to make sure that Defence complied with accepted guidelines for research involving human beings.
- After World War II, there was concern around the world about human experimentation. The Declaration of Helsinki was made in 1964, which provided the basic principles to be followed wherever humans were used in research projects.
- The National Health & Medical Research Council in Australia (NHMRC) published a set of guidelines in 1982 for how human research should be carried out.
- ADHREC follows both the Declaration of Helsinki and the NHMRC Guidelines.

What ADHREC approval means

- If you are told that the project has ADHREC approval, what that means is that ADHREC has reviewed the research proposal and has agreed that the research is ethical.
- ADHREC approval does not imply any obligation on commanders to order or encourage their troops to participate, or to release troops from their usual workplace to participate. Obviously, the use of any particular troops must have clearance from their commanders but commanders should not use ADHREC approval to pressure troops into volunteering.

Voluntary participation

- As you are a volunteer for this research project, you are under no obligation to participate or continue to participate. You may withdraw from the project at any time without detriment to your military career or to your medical care.
- At no time must you feel pressured to participate or to continue if you do not wish to do so.
- If you do not wish to continue, it would be useful to the researcher to know why, but you are under no obligation to give reasons for not wanting to continue.

Informed consent

- Before commencing the project you will have been given an information sheet which explains the project, your role in it and any risks to which you may be exposed.

APPENDIX H

HEALTH AND HUMAN PERFORMANCE RESEARCH IN THE AUSTRALIAN DEFENCE ORGANISATION

- You must be sure that you understand the information given to you and that you ask the researchers about anything of which you are not sure.
- If you are satisfied that you understand the information sheet and agree to participate, you should initial every page of the information sheet and keep a copy.
- Before you participate in the project you should also have been given a consent form to sign. You must be happy that the consent form is easy to understand and spells out to what you are agreeing. Again, you should keep a copy of the signed consent form.

Tracing of research participants

- Media reports of human experimentation during times of conflict, eg. WWII, Vietnam War, have raised the issue of being able to trace study participants, some time in the future, should any problems arise that may be related to the research conducted.
- To facilitate this, ADHREC requires that the researcher provide a nominal roll of study participants for safekeeping by ADHREC, where the study is a clinical trial (eg. When the researchers are trialling a new treatment or device). We need to know who you are, only so that we can find you in the future, if there is any suggestion that the research may have been associated with the development of any health problems.
- This is consistent with current Occupational Health and Safety and Health Surveillance practices, and is encouraged under the NHMRC Guidelines.
- All ADHREC protocol files are secured in a locked filing cabinet and only the Secretariat has access to these. If you do need to be traced in the future, ADHREC will do this. ADHREC will not pass your contact information to a third party without your permission.
- These records will not be used to consider your medical employment standard or for compensation purposes.

Complaints

- If at any time during your participation in the project you are worried about how the project is being run or how you are being treated, then you should speak to the researchers.
- If you don't feel comfortable doing this, you can contact the Executive Secretary of ADHREC. Contact details are:

Executive Secretary
Australian Defence Human Research Ethics Committee
CP2-7-66
Department of Defence
CANBERRA ACT 2600

Ph: 02 62663837 Fax: 02 62664982
E-mail: ADHREC@defence.gov.au

APPENDIX H

HEALTH AND HUMAN PERFORMANCE RESEARCH IN THE AUSTRALIAN DEFENCE ORGANISATION

More information

- If you would like to read more about ADHREC, you can look up the following references on the Defence Manager's Toolbox or on DEFWEB
 - DI(G)ADMIN 24-3 *Function, Structure and Procedures for Obtaining Clearance for Research from Australian Defence Medical Ethics Committee* (or as amended)
 - HPD 205 *Australian Defence Medical Ethics Committee* (or as amended)
 - ADFP733 *Health and Human Performance Research in the Australian Defence Organisation – Manual for Researchers*

Or, visit our web site at <http://defweb2.cbr.defence.gov.au/dpedhs/defaultinfocentre.htm>

INSTRUCTOR'S

MANUAL

SESSION 1

PROGRAM OUTLINE

Time and length

- Sessions will be held on _____
- Sessions will be 1.5hrs in duration
- Sessions will be conducted over 4wks

Aspects to be covered

- Concept of stress
- Dealing with solvable problems – identifying personally relevant problems and ways to manage/resolve them
- Self-soothing
- Learning arousal reduction techniques
- Learning how to manage unsolvable problems – defining your personal control; learning distraction techniques; identifying compensatory activities
- Practice! Practice! Practice!

Aims

- Identify the sources of your work stress
- Increase awareness of your own stress
- Learn how to solve your problems in ways which reduce your stress and increase your confidence in dealing with such problems
- Learn how to relax the body and increase its resilience to everyday stress

My role and your role

- My role in the group is a facilitator
- Your role in the group is to work as part of a team in solving problems
- Your role will be an active one

Group rules

- Confidentiality
- Respect for other group members
- Work together as a team
- No rank
- Personal rules

WHAT IS STRESS?

It involves an appraisal process of the demands (potential stressors) of the situation and the person's coping resources in relation to those demands.

Stress will be experienced if the person deems that the available resources are insufficient to meet the demands.

Give examples

- *Physical – asked to lift piece of heavy machinery without equipment to do so*
- *Concentration – asked to concentrate for too long e.g. sit in front of console for several hours without a break*
- *Arousal – high operational tempo over extended period*
- *Beliefs – asked to do something and know you can't e.g. asked to perform a job well above your rank ability and training*

APPRAISAL PROCESS

There are 3 types of stressful appraisals:

- ✚ 'Harm-loss' – real or anticipated loss of something that has great personal significance e.g. separation from spouse or child; loss of rank; loss of self-esteem; physical injury and loss of functioning
- ✚ 'Threat' – demands exceed coping resources available; emotional tone is negative
- ✚ 'Challenge' – perceive sufficient resources to meet the demanding and potentially risky situation (potential for growth; feelings of anticipation and excitement) e.g. war games

Factors that influence appraisal process:

- ✚ previous experience
 - have dealt successfully or unsuccessfully with similar stressor
- ✚ values and beliefs
 - world views developed from a young age
 - information obtained from caregivers, family, friends, media, etc.
- ✚ perceived level of control
 - those who perceive they have more control in a situation tend to experience less distress
 - however, this is mostly only true for individuals who also have high self-efficacy
 - those with low self-efficacy have been found to become more anxious with more control or do not use this level of control effectively

✚ self-efficacy

- part of the secondary appraisal i.e. do I have the skills/resources to meet the current demands
- strong belief in self-efficacy usually leads to lower stress levels; weak belief in coping efficacy usually leads to higher stress levels
- self-concept shapes our expectations for success in the future i.e. previous success feeds positive self-concept; past failure feeds negative self-concept

✚ an event's timing

- is the stressor occurring alone or is it coming on the back of another stressor e.g. relationship breakdown just prior to deploying

As a result of such factors, different people can interpret the same event differently.

Discuss example in relation to appraisal process and influential factors.

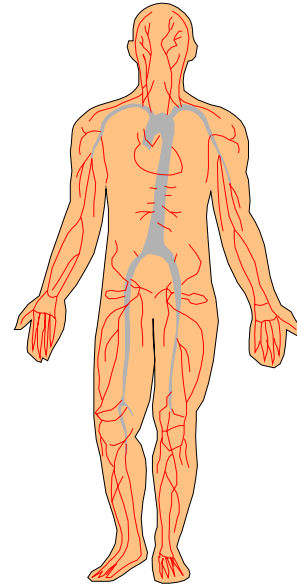
Activating event-----Beliefs (interpretation)----- Consequences

Situation	Self-talk	Reactions (emotions, body, behaviour)
Example 1. Presence Of a dog	My dog is a faithful friend. They make great playmates.	Feels happy. Plays with dog.
Example 2. Presence Of a dog	Dogs are vicious. They growl and bite. They slobber all over you. I've never had a good experience with one. I still remember being bitten.	Feels frightened. Walks away. Avoids the dog.

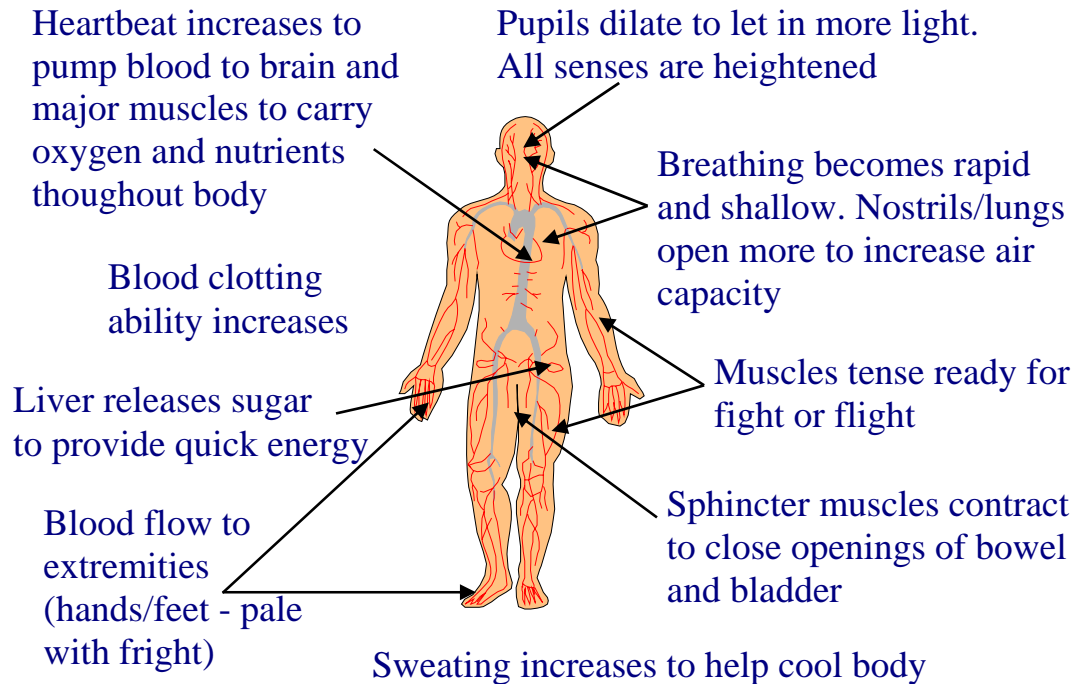
STRESS RESPONSE

Fight or Flight

- **Senses inform brain of danger**
- **Hormones released**
- **Nervous system sends signals**
- **Physical changes produced**



- ❖ Breathing speeds up and the nostrils and lungs open wide, increasing the amount of oxygen available for the muscles.
- ❖ Pupils dilate to let in more light. Senses are heightened. Focus on ‘threat’.
- ❖ Heart rate and blood pressure increase so that the oxygen and nutrients required by the body’s cells can be transported quickly to where they are needed.
- ❖ Blood is diverted to the muscles, particularly the large muscles in the legs to allow rapid flight. Less blood is allocated to areas that do not immediately require nutrition. Blood moves away from the face and you may turn “pale with fright”.
- ❖ Muscles tense, preparing you to respond quickly.
- ❖ Blood clotting ability increases in order to minimise blood loss should injury occur.
- ❖ Sweating increases to cool the body, stopping it overheating when strenuous physical activity begins. Blood vessels expand and move toward the skin to cool the blood. This may show as blushing or blotchy skin.
- ❖ Digestion is put on hold. Your mouth dries as less saliva is produced. Food sits heavily in the stomach and you may feel nausea or ‘butterflies’. Instead, glucose is released from the liver to provide energy.
- ❖ Sphincter muscles contract to close bowel and bladder. May lead to constipation.
- ❖ The immune system slows down. In the short-term, the body puts all of its effort into escaping.



Immune responses decrease - useful in short-term to allow massive response to immediate threat - harmful over long period

General Adaptation Syndrome (GAS)

✚ Alarm reaction – fight-or-flight

- Occurs at the first appearance of a stressor
- The body has a lower than normal level of resistance (short period)
- Draws together defensive resources and makes self-protective adjustments
- If these defensive reactions are successful, then the alarm subsides and the body returns to normal activity
- Many stressors can be resolved in this stage
- Sometimes referred to as acute stress reaction
- All senses are put on alert until the danger is over

✚ Resistance – body's attempt to return to normal functioning

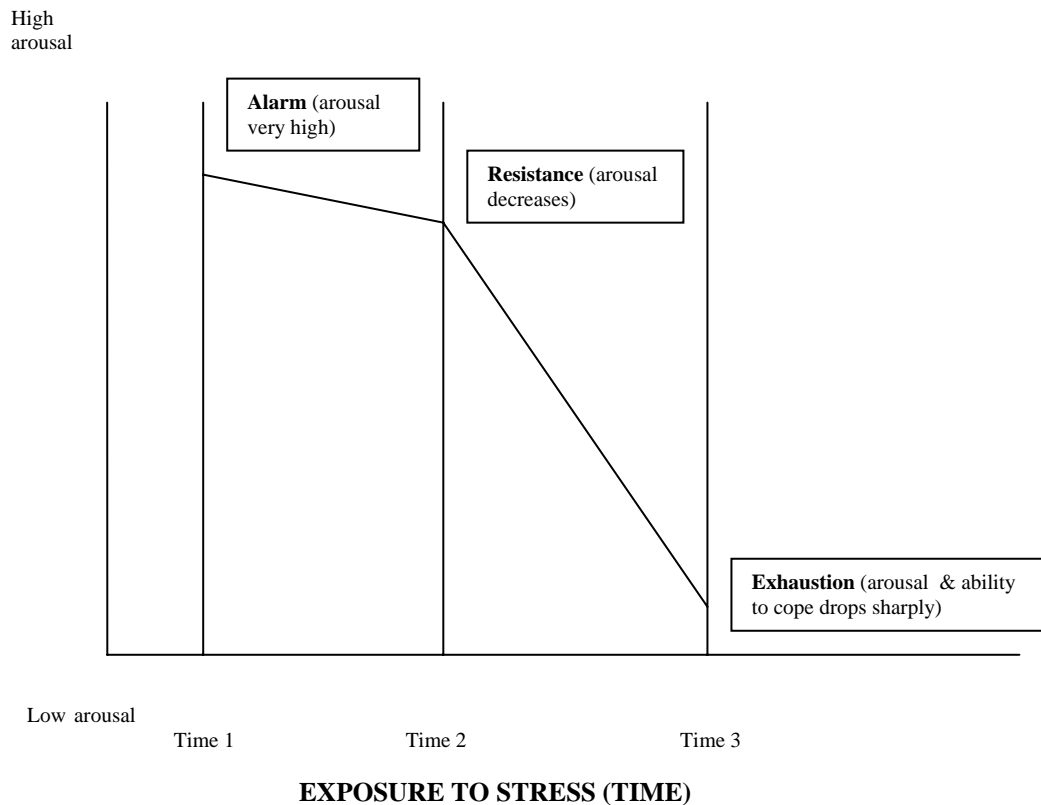
- The body tried to revert back to a state of physiological homeostasis by resisting the alarm
- Complete homeostasis is never reached if the perception of threat still exists
- Body stays activated/aroused enough to cause higher metabolic rate in some organ tissues
- If the stressor persists (chronic), the body will call for full-scale mobilisation

- Many resources are expended in the process, which decreases resistance over time
- Physical symptoms may result, which may further reduce resistance

✚ Exhaustion – organ dysfunction or death; increased risk of infection or illness

- If the stressor is unusually severe or drawn out, the body further depletes or exhausts its reserves of energy
- Organs targeted by metabolic processes can no longer meet the demands placed on it
- Resistance breaks down altogether, and dysfunction or death may result

Figure 1: Physiological reactions to stress: Three stages



Source: Greenberg & Baron (1995)

CUMULATIVE STRESS & STRAIN

Cumulative stress is the result of strain that occurs too often (FREQUENCY), lasts too long (DURATION) and is too severe (INTENSITY). In these circumstances, distress may lead to exhaustion and other manifestations so that the person is unable to cope with the amount of stress they are experiencing.

- Frequency – too often
- Duration – too long
- Intensity – too much

Cumulative stress is a build-up of stressors/demands over a period of time resulting in a depletion of the person’s coping resources.

“The straw that broke the camel’s back”.

Stressors/demands can be psychological or physical.

Stress results in strain (stress reaction) that can be experienced by the person as physiological, behavioural, and psychological.

EXERCISE
List some common signs and symptoms of stress for each area in the table below.

PHYSICAL	THOUGHTS
<ul style="list-style-type: none"> • Neck and shoulder tension • Back pain <p><i>Link in with breathing; carefully chosen technique to address pain and tension</i></p>	<p><i>Ask someone for example of time when stressed</i></p> <p><i>What did they tell themselves?</i></p> <p><i>Link in with session on self-soothing/talk; processing biases.</i></p>
BEHAVIOURS	EMOTIONS
<p><i>Refer to examples of stressful times for each person – what did they do? E.g. shut down, yell.</i></p> <p><i>Indicate that we will be looking at different things in the program to fit with who you want to be i.e. how you would like to react in certain situations</i></p>	<p><i>Blame & Guilt – two core emotions</i></p> <p><i>Blame – external/acting out – hostile and aggressive behaviours</i></p> <p><i>Guilt – internal/disabling – sadness, worry</i></p> <p><i>Both paralysing</i></p> <p><i>Don’t get stuck in guilt or blame</i></p>

COMMON SIGNS AND SYMPTOMS OF STRESS

Physical

- ✚ Tiredness, fatigue, lethargy
- ✚ Muscle tension and aches
- ✚ Headaches
- ✚ Heart palpitations, shallow breathing
- ✚ Bowel disturbance, heart burn, indigestion
- ✚ Sleep disturbance
- ✚ Lowered libido
- ✚ Excessive sweating

Thoughts

- ✚ Intrusive and/or racing thoughts
- ✚ Inability to prioritise
- ✚ Concentration difficulties; mental fatigue
- ✚ Deterioration in recent memory
- ✚ Confusion in thinking
- ✚ Difficulty making decisions
- ✚ Loss of spontaneity and creativity

Behavioural

- ✚ Decreased personal hygiene
- ✚ Changes in ordinary behaviour patterns
- ✚ Overeating; loss of appetite
- ✚ Withdraw from others; isolate self; prolonged silences
- ✚ Increased alcohol and drug use and abuse
- ✚ Lowered performance and productivity
- ✚ Failing to maintain good work habits
- ✚ Procrastination, work avoidance and absenteeism
- ✚ Increased risk-taking behaviours e.g. reckless driving, gambling
- ✚ Aggression, vandalism, and stealing; outright sabotage on the job

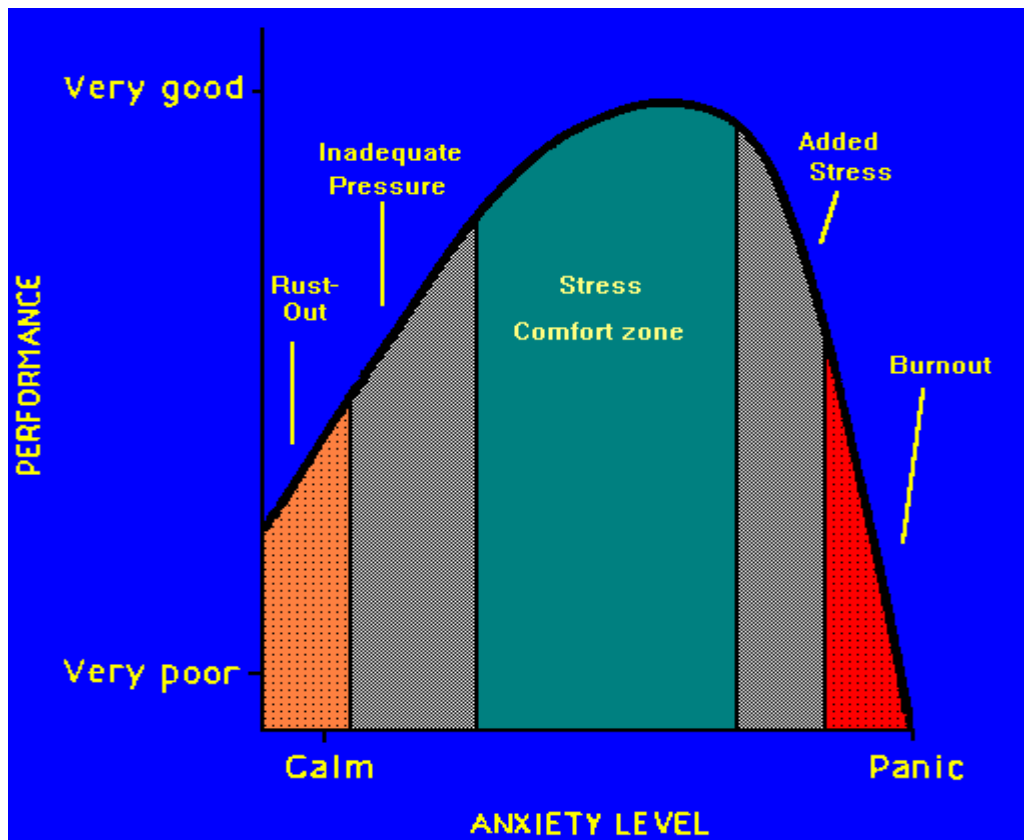
Emotional

- ✚ Blame
- ✚ Irritability, aggression, hostility
- ✚ Guilt
- ✚ Worry, anxiety and apprehension
- ✚ Moodiness; sadness
- ✚ Feeling overwhelmed
- ✚ Lowered self-esteem
- ✚ Emotional hypersensitivity
- ✚ Boredom and job dissatisfaction

STRESS AND PERFORMANCE

Not all stress is bad.

The following diagram is an easy way to see and understand the association between stress and performance.



Stress comfort zone = performance at peak level

Inadequate pressure/added stress = performance at acceptable level

Rust-out/burnout = performance deteriorates rapidly

Adapted from: Brecht, G. (1996).

It is clear from this that too little or too much stimulation, pressure or stress can have a detrimental effect on our performance.

Rust-out leads to poor or lowered performance due to lethargy, boredom, inability to focus, lack of planning and a tendency to procrastinate on tasks. Productivity is low.

Burnout leads to faulty judgment, feelings of being overwhelmed, fatigue, becoming forgetful, loss of perspective, irritability, unpredictable and emotional behaviour and less rational thinking and behaviour. Productivity is again low.

The stress comfort zone leads to high motivation, an ability to grasp and process information rapidly, sound judgments, efficient and energetic actions. Productivity is high.

The general rule of thumb is that either too much or too little stimulation is not good for us if either situation continues for too long. However, we need some pressure and stimulation for a reasonable amount of time to perform at our best.

*Stress can also result from positive experiences e.g. job change, marriage, moving, sexual activity

POSITIVE COMBAT STRESS

Combat and war are said to bring out the best and worst in people. The purpose of good military leadership, discipline and training is to bring out the best while preventing the worst.

Positive combat stress behaviours include the heightened alertness, strength, endurance and tolerance to discomfort which the fight/flight response and the stage of resistance can produce when properly in tune. Other examples include the strong personal bonding between military personnel and the pride and self-identification that they develop with the unit's history and mission (esprit de corps). These together form unit cohesion – the binding force that keeps personnel together and performing the mission in spite of danger and the risk of death.

The ultimate positive combat stress behaviours are acts of extreme courage and action involving almost unbelievable strength, sometimes involving deliberate self-sacrifice. Positive combat stress behaviours can be elicited by sound military training, wise personnel policies and good leadership.

- ✓ **Increased alertness, strength, endurance - exhilaration**
- ✓ **Gamesmanship and sportsmanship**
- ✓ **Sense of eliteness and desire for recognition**
- ✓ **Sense of purpose**
- ✓ **Increased religious faith**
- ✓ **Personal bonding**
- ✓ **Horizontal and Vertical bonding (peer-peer; leader-subordinate)**
- ✓ **Unit identity**
- ✓ **Unit cohesion**
- ✓ **Heroism**

COPING RESOURCES

Two types of coping methods:

- ✓ Active/problem-focussed coping
 - modify, manage or eliminate the source of the distress
 - changing the self-environment relationship
 - e.g. use the divisional system to address such problems as workplace conflict, role overload

- ✓ Avoidance/emotion-focussed coping
 - regulate distressing emotions
 - lessen emotional pain and distress
 - e.g. just trying to cope with hurt and sadness associated with separation from partner

The two are not independent of each other and people may use both to deal with the problem e.g. person missing their partner may also use such strategies as writing letters or calling when in port

Coping strategies

- ✓ talking to someone
- ✓ learning new skills
- ✓ staying away
- ✓ exercise
- ✓ positive self-talk
- ✓ humour

COMMON FACTORS LEADING TO WORK STRESS

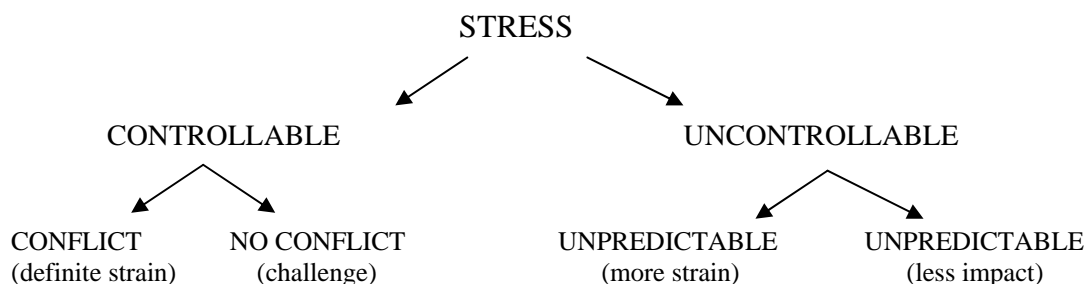
- ❖ There are a number of factors that can lead to work stress, such as too much responsibility, interpersonal conflict, and lack of positive feedback (for a comprehensive list, please refer to the SCCL).

- ❖ In understanding and managing your own stress, it will be important to identify your personally relevant problems that you are currently experiencing.

EXERCISE

On the Priority Problems Worksheet in the workbook list your priority problems.

CONTROLLABILITY/PREDICTABILITY



Situations that are perceived as either being within the person's control and/or something they can prepare for are seen as less stressful than those which are perceived as either UNCONTROLLABLE or UNPREDICTABLE and ones which they cannot prepare for.

Controllable and/or predictable problems are generally perceived as being solvable. There are other problems which may be perceived as unsolvable and the only control you may have is over the way you think and the way you feel.

EXERCISE.

For each of the priority problems you identified, note whether the problem is solvable or unsolvable. Once you have determined this, identify which aspect you have some control over.

EXERCISE.

Explain the Personal Questionnaire. Identify your 10 PQ items and give rating on SUDS scale.

TASK

Choose 2-3 solvable problems that you would like to work on.

SESSION 2 OUTLINE

- Identify nominated problems. Is this really their problem? Are they taking on someone else's problem? Is tackling this problem going to make them feel good about themselves? Try to pick problems that are more than a 6 out of 10 on SUDS (use SCCL for examples).
- Use one person's problem as an example to discuss with the group.
- Complete example of Learning to Cope with Stress Worksheet and discuss within the group. Aiming for realistic drop in SUDS score (may only get down to a 5 but that is seen as being OK/manageable), and 8 out of 10 for Perceived Coping.
- Determine what action they can take within their power. Is the action likely to be effective? Is the action worth the effort? Does it fit with their sense of self? How will they carry it out?
- Get the group to identify alternative strategies for their priority problems. Discuss one example for each person.
- Introduce relaxation component. Explain the rationale of relaxation in relation to the physiological component of the stress response.
 - Purpose is to intercept the stress response and return the body to physiological homeostasis
 - Diaphragmatic breathing is easiest method of relaxation to practice and is very powerful tool

- Highlight benefits of relaxation and utility in the submarine environment and in the face of stress.
 - Easy to implement, as breathing is something we normally do
 - Can be incorporated into other techniques e.g. mentally imagery
 - Can be used in the face of stress
 - Reduce muscle tension/ache, specifically neck and shoulder area
- Record their current level of relaxation on the VAS.
- Record blood pressure using the monitors.
- Teach paced diaphragmatic breathing technique.
- Record their level of relaxation on the VAS post-exercise.
- Record blood pressure post-exercise.
- Provide relaxation tapes for each group member and ask them to practice daily.
- Complete example of 'Record of Relaxation Practice'.
- Rate PQ items.

SESSION 3 OUTLINE

- Briefly review relaxation and monitoring sheet. What did they like? Any difficulties experienced?
- Review worksheets. What worked, what didn't?
- Introduce cognitive processing biases and the concept that soothing themselves will allow them to be more the person they want to be (in comparison to distressing interpretations which will stress them and therefore make it more difficult to be who they want to be in the problem situations).
- What did they tell themselves that might have made the situation worse?
- Develop realistic alternative soothing interpretations and look at the processing biases.
- What actions do you need to take in that situation to judge yourself positively? What actions do they need to avoid in order to not judge themselves badly?
- What do you need to tell yourself about that situation?
- Amplify positives and begin to interpret negatives in a neutral emotional space as 'feedback' to be addressed
- Discuss within neutral emotional space - feedback is just that; "just a kettle boiling"; maintain integrity in the face of receiving criticism; not to get distressed in the face of feedback; don't get defensive builds resilience.
- Do example with each group member. Rate PQ items.

Self Talk

Stress isn't just about the way you act, it's also about what you think.

The next step in working towards resolving your priority problems is to reach a soothing interpretation.

There is no point in staying distressed..... The more distressed you are the less likely you are able to be who you want to be/to feel good about yourself.

Changing the way you think involves changing what you tell yourself in the face of the stressor and changing the habitual way you process information.

To help your reach soothing self talk, think about the following in relation to what you tell yourself about your priority problems?

- Am I thinking there is something wrong with me or I have done something wrong?
- Don't get stuck in blame or guilt
- Stick to the situation and the evidence.
- Am I joining together past events/people?
- Am I just using either/or thinking with only one possible consequence? What are other consequences?
- Am I imagining something far worse than is realistic? Jumping to conclusions?
- What are the chances of it happening?
- Even if it did happen, have you ever dealt with anything like this before, or do you think you the skills to cope?
- If not, identify what those skills are and learn them!
- What are other possible interpretations/self talk?
- Now, what do you want to tell yourself?

EXERCISE

Think of a recent experience when you felt stressed. What did you tell yourself? Which processing biases do you think you may have got hooked into? What else can you tell yourself?

SESSION 4 OUTLINE

- Review monitoring, self-soothing statements and processing biases, and PQ items.
- Amplify positives and deal with problems/negative feedback utilising a neutral emotional space (e.g. we all make mistakes and negative feedback needs to be self-evaluated realistically with a plan then made concerning the appropriate action to be taken to resolve the issue).
- Do examples for each person. Rate PQ items.
- Review relaxation practice. Discuss using with on-the-spot stress.
 - ✓ Examples include: when being criticised, having to speak in front of the crew, needing to concentrate and focus on the job, when having racy thoughts

SESSION 5 OUTLINE

- Discuss the BRAC-cycle. Identify activities to be used.
- Reintroduce the concept that not all problems can be solved and that each person needs to develop distraction techniques and identify compensatory activities to counterbalance stress.
- Have each group member identify their distraction and compensatory activities to be used and record the latter on Compensatory Activity Worksheet. Rate PQ items.

Basic-Rest-Activity Cycle (BRAC)

- This involves working with the natural shift in left and right cerebral hemisphere activity with its associated adrenal or relaxation response
- Long term excessive demands (either internal or external) break down the body's natural cycle of oscillation
- Right hemisphere-parasympathetic cycle is typically overridden
- Results in insufficient time relaxing and difficulties doing so

Working with the BRAC cycle involves:

- Doing 90 minutes of purposeful work and then taking a 15 minute break
- During this 15 minute break, activities likely to stimulate right hemisphere functioning are undertaken, for example:
 - ✓ Listening to music
 - ✓ Drawing
 - ✓ Looking at photographs
 - ✓ Giving yourself a hand massage
 - ✓ Completing breathing exercises
 - ✓ Relaxing the neck and shoulders through stretching
- Return to normal duties following this break
- Repeat 90/15 cycle throughout work day
- Try to avoid stimulants during your break e.g. caffeine

List some activities that you plan to schedule into your 15 minute breaks.

_____	_____
_____	_____
_____	_____
_____	_____

UNSOLVABLE PROBLEMS

We all have unsolvable problems. These might be things which we have to do, or they might actually be someone else's problem and the only control we can have over them is what we tell ourselves or how we feel.

Examples include:

- Doing duties
- Chores at home
- Being at work on time
- Working in a confined environment
- Working back late
- Separation from family and friends

These may not be a problem for you but if you have a problem which either:

- Cannot be solved
- Or is not yours to solve

You need to do three things:

1. Identify it as an unsolvable problem.

- Nothing you can do about it
- Someone else's problem

2. Do something which will distract you from the problem, which is:

- Simple
- Doesn't cost money
- Is in your control

Examples of the kinds of things which other people have found helpful include:

- Singing along to music
- Talking to a friend NOT ABOUT THE PROBLEM
- Reading something else
- Writing something else

Distraction techniques are used in the face of a stressor and require output for 3-5 minutes.

If you keep coming back to it, label it as an 'unsolvable problem' and then use distraction techniques.

Discuss examples of unsolvable problems for each group member and identify distraction techniques to be used.

Even when you identify the problem is not within your control and distract, it is still likely to cause a level of stress/distress. When you have unsolvable problems, in addition to distracting yourself, you also need to do compensatory activities.

3. This involves doing something which makes you feel good about yourself.

You need to find things which will 'compensate' or make you feel better when you have had a rough day.

Compensatory activities are usually done after a stressor has occurred, or at the end of a rough day. Effective compensatory activities are purposeful, and ones which you feel competent and efficient in doing, and remind you of a good sense of self.

For example:

- Completing other work that you are good at
- Challenging a crew member to a game that you play well
- Reading a good book
- Computer games
- Physical activity e.g. push-ups, sit-ups, cycling, rowing, hand-weights
- Listening to your favourite music
- Watching videos
- Playing games e.g. cards

To identify effective compensatory activities, as you go through the next week schedule some of these.

Do a before and after check of how you are feeling as you do the things which you think you enjoy and would be compensatory. Notice which activities make a positive difference. **Record this on the COMPENSATORY ACTIVITY WORKSHEET.**

Also be aware that otherwise neutral activities can sometimes take on compensatory value because of how you perceive them e.g. washing your basics = purpose, competence, efficiency

When you are bothered by an unsolvable problem, make sure you do at least one of these things. Sometimes you may need to do more than one thing. The aim is to get you back to feeling good about yourself and calm within yourself.

SESSION 6 OUTLINE

- Review breathing in the face of stress.
- Review BRAC activities.
- Review compensatory activities.
- Review progress with priority problems and discuss any new problems being tackled. Rate PQ items.

SESSION 7 OUTLINE

- Same as Session 6.

SESSION 8 OUTLINE

- Review progress. Review strategies covered.
- Do behavioural relaxation check.
- Discuss ways they will remember to take care of themselves for relapse prevention e.g. keep monitoring their personal physical signs of stress and utilise paced diaphragmatic breathing when confronted by a stressor; listen to the relaxation tape to lower arousal; continue with a daily review to determine if there are issues still on their mind at the end of the day, which need problem solving and cognitive restructuring; when confronted with unsolvable/uncontrollable problems continue to utilise distraction and compensatory activities.
- Discuss continued monitoring of priority problems until they achieve competence. Rate PQ items and review.
- Individual program component evaluation.

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Rice, P.L. (1992). *Stress and health (2nd ed.)*. Pacific Grove, CA: Brooks/Cole.

PROGRAM OUTLINE

Time and length

- Sessions will be held on _____
- Sessions will be 1.5hrs in duration
- Sessions will be conducted over _____

Aspects to be covered

- Concept of stress
- Dealing with solvable problems – identifying personally relevant problems and ways to manage/resolve them
- Self-soothing
- Learning arousal reduction techniques
- Learning how to manage unsolvable problems – defining your personal control; learning distraction techniques; identifying compensatory activities
- Practice! Practice! Practice!

Aims

- Identify the sources of your work stress
- Increase awareness of your own stress
- Learn how to solve your problems in ways which reduce your stress and increase your confidence in dealing with such problems
- Learn how to relax the body and increase its resilience to everyday stress

My role and your role

- My role in the group is a facilitator
- Your role in the group is to work as part of a team in solving problems
- Your role will be an active one

Group rules

- Confidentiality
- Respect for other group members
- Work together as a team
- No rank
- Personal rules

WHAT IS STRESS?

It involves an appraisal process of the demands (potential stressors) of the situation and the person's coping resources in relation to those demands.

Stress will be experienced if the person deems that the available resources are insufficient to meet the demands.

Appraisal Process

- ✚ 'Harm-loss' – real or anticipated loss
- ✚ 'Threat' – demands exceed coping resources
- ✚ 'Challenge' – perceive sufficient resources to meet the demands (potential for growth; feelings of anticipation and excitement)

Factors that influence appraisal process:

- ✚ previous experience
- ✚ values and beliefs
- ✚ perceived level of control
- ✚ self-efficacy
- ✚ an event's timing

As a result of such factors, different people can interpret the same event differently.

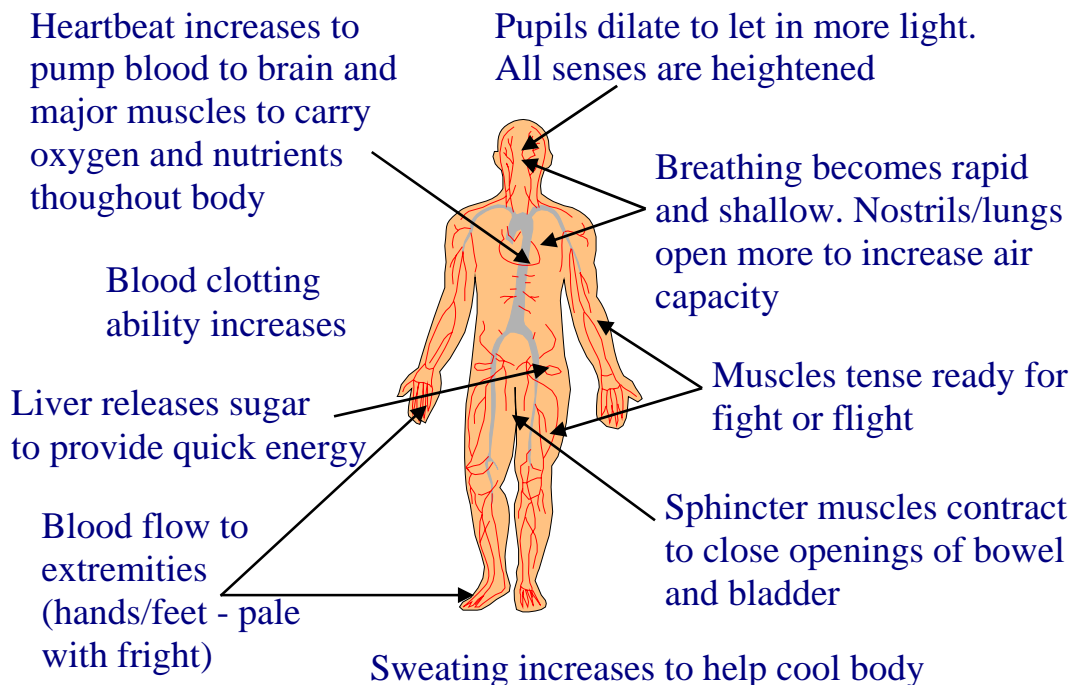
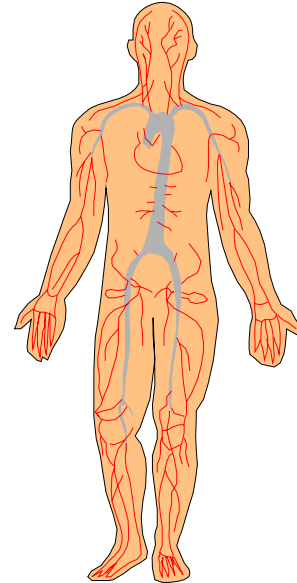
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Example 2. Presence Of a dog	Dogs are vicious. They growl and bite. They slobber all over you. I've never had a good experience with one. I still remember being bitten.	Feels frightened. Walks away. Avoids the dog.

STRESS RESPONSE

Fight or Flight

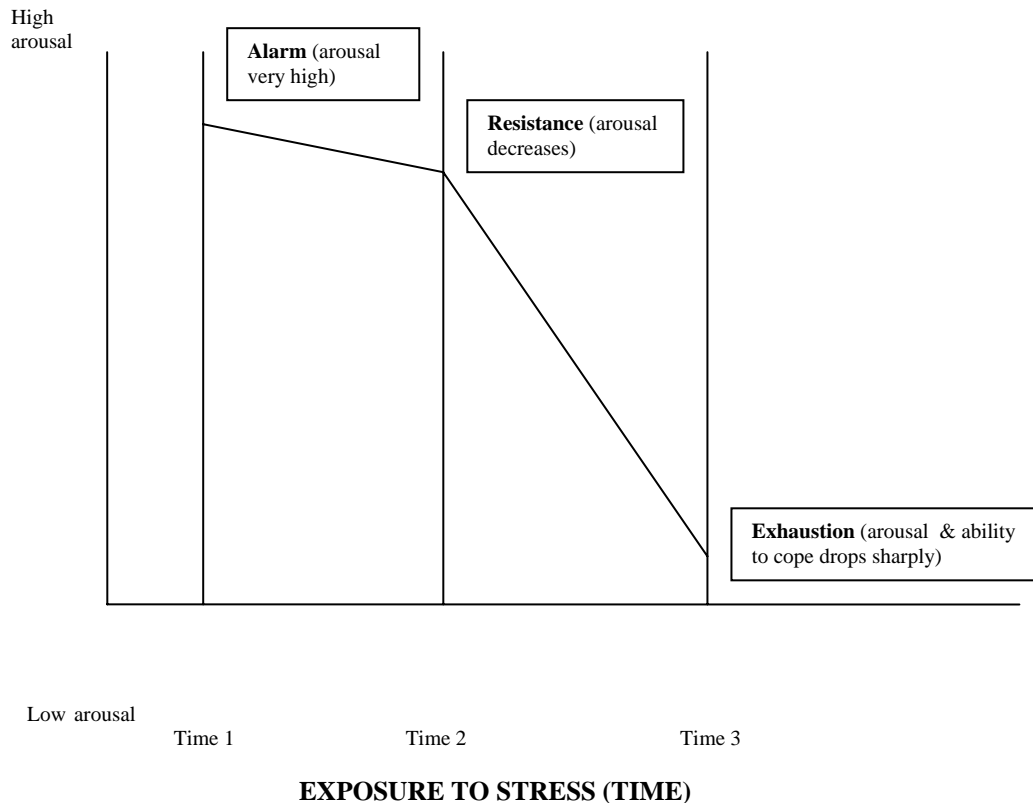
- Senses inform brain of danger
- Hormones released
- Nervous system sends signals
- Physical changes produced



Immune responses decrease - useful in short-term to allow massive response to immediate threat - harmful over long period

GENERAL ADAPTATION SYNDROME

- ✚ Alarm reaction – fight-or-flight
- ✚ Resistance – body’s attempt to return to normal functioning
- ✚ Exhaustion – organ dysfunction or death; increased risk of infection or illness



Source: Greenberg & Baron (1995)

CUMULATIVE STRESS & STRAIN

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BEHAVIOURS	EMOTIONS

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- ✚ Headaches
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- ✚ Bowel disturbance, heart burn, indigestion
- ✚ Sleep disturbance
- ✚ Lowered libido
- ✚ Excessive sweating

Thoughts

- ✚ Intrusive and/or racing thoughts
- ✚ Inability to prioritise
- ✚ Concentration difficulties; mental fatigue
- ✚ Deterioration in recent memory
- ✚ Confusion in thinking
- ✚ Difficulty making decisions
- ✚ Loss of spontaneity and creativity

Behavioural

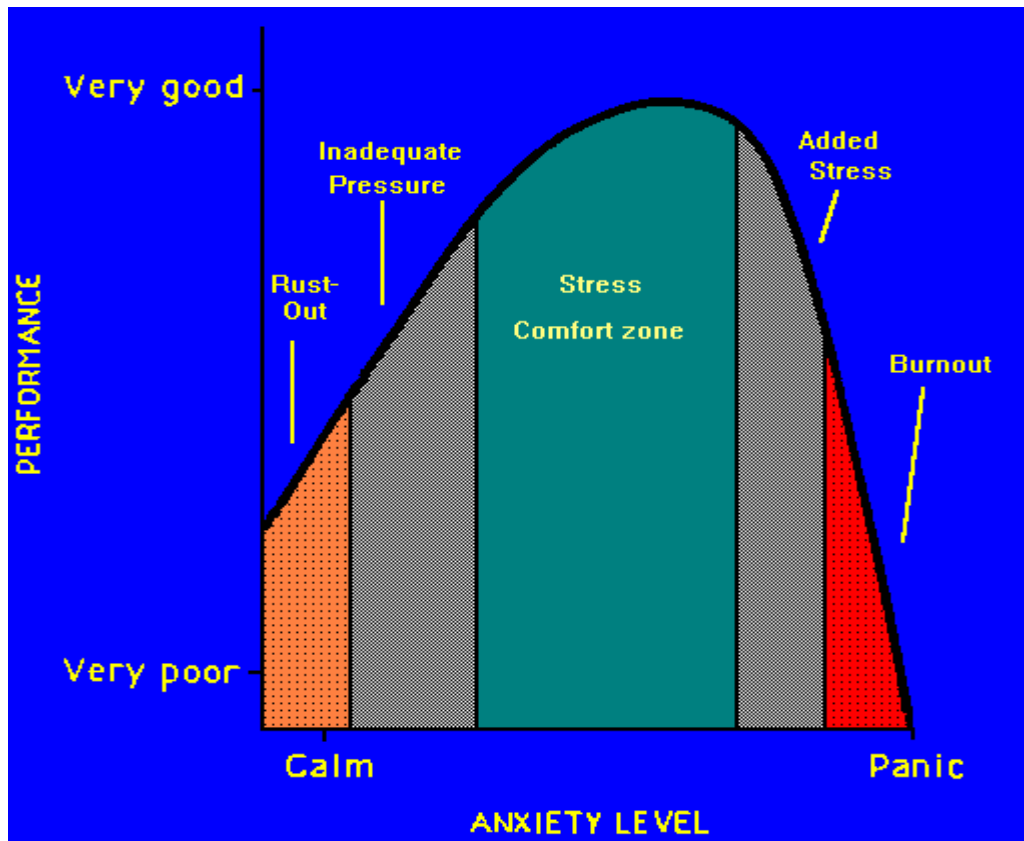
- ✚ Decreased personal hygiene
- ✚ Changes in ordinary behaviour patterns
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- ✚ Increased alcohol and drug use and abuse
- ✚ Lowered performance and productivity
- ✚ Failing to maintain good work habits
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Emotional

- ✚ Blame
- ✚ Irritability, aggression, hostility
- ✚ Guilt
- ✚ Worry, anxiety and apprehension
- ✚ Moodiness; sadness
- ✚ Feeling overwhelmed
- ✚ Lowered self-esteem
- ✚ Emotional hypersensitivity
- ✚ Boredom and job dissatisfaction

STRESS AND PERFORMANCE

Not all stress is bad.



Adapted from Brecht, G. (1996).

Positive Combat Stress

- ✓ Increased alertness, strength, endurance - exhilaration
- ✓ Gamesmanship and sportsmanship
- ✓ Sense of eliteness and desire for recognition
- ✓ Sense of purpose
- ✓ Increased religious faith
- ✓ Personal bonding
- ✓ Horizontal and Vertical bonding
- ✓ Unit identity
- ✓ Unit cohesion
- ✓ Heroism

From Virtual Naval Hospital Field Manual No. 22-51: Leaders' Manual for Combat Stress Control: Combat Stress Behaviours.

COPING RESOURCES

Two types of coping methods:

- ✓ Active/problem-focussed coping
 - modify, manage or eliminate the source of the distress
- ✓ Avoidance/emotion-focussed coping
 - regulate distressing emotions

Examples of coping strategies

- ✓ talking to someone
- ✓ learning new skills
- ✓ staying away (can be effective in the short-term)
- ✓ exercise
- ✓ positive self-talk
- ✓ humour

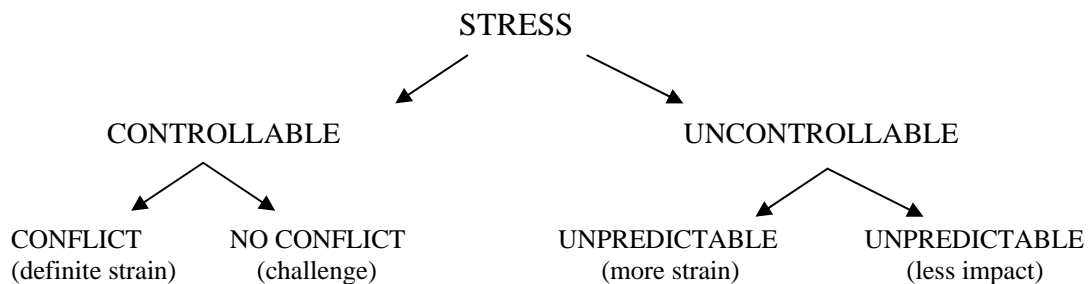
COMMON FACTORS LEADING TO WORK STRESS

- ❖ There are a number of factors that can lead to work stress, such as too much responsibility, interpersonal conflict, and lack of positive feedback (for a comprehensive list, please refer to the SCCL).
- ❖ In understanding and managing your own stress, it will be important to identify your personally relevant problems that you are currently experiencing.

EXERCISE

On the Priority Problems Worksheet in the manual list your priority problems.

CONTROLLABILITY/PREDICTABILITY



Situations that are perceived as either being within the person's control and/or something they can prepare for are seen as less stressful than those which are perceived as either UNCONTROLLABLE or UNPREDICTABLE and ones which they cannot prepare for.

Controllable and/or predictable problems are generally perceived as being solvable. There are other problems which may be perceived as unsolvable and the only control you may have is over the way you think and the way you feel.

EXERCISE.

For each of the priority problems you identified, note whether the problem is solvable or unsolvable. Once you have determined this, identify which aspect you have some control over.

EXERCISE.

Identify your 10 PQ items and give rating on SUDS scale.

TASK

Choose 2-3 solvable problems that you would like to work on.

SELF TALK

Stress isn't just about the way you act, it's also about what you think.

The next step in working towards resolving your priority problems is to reach a soothing interpretation.

There is no point in staying distressed..... The more distressed you are the less likely you are able to be who you want to be or to feel good about yourself.

Changing the way you think involves changing what you tell yourself in the face of the stressor and changing the habitual way you process information.

To help your reach soothing self talk, think about the following in relation to what you tell yourself about your priority problems?

- Am I thinking there is something wrong with me or I have done something wrong?
- Don't get stuck in blame or guilt
- Stick to the situation and the evidence.
- Am I joining together past events/people?
- Am I just using either/or thinking with only one possible consequence? What are other consequences?
- Am I imagining something far worse than is realistic? Jumping to conclusions?
- What are the chances of it happening?
- Even if it did happen, have you ever dealt with anything like this before, or do you think you have the skills to cope?
- If not, identify what those skills are and learn them!
- What are other possible interpretations/self talk?
- Now, what do you want to tell yourself?

EXERCISE

Think of a recent experience when you felt stressed. What did you tell yourself? Which processing biases do you think you may have got hooked into? What else can you tell yourself?

BASIC-REST-ACTIVITY CYCLE (BRAC)

- This involves working with the natural shift in left and right cerebral hemisphere activity with its associated adrenal or relaxation response
- Long term excessive demands (either internal or external) break down the body's natural cycle of oscillation
- Right hemisphere-parasympathetic cycle is typically overridden
- Results in insufficient time relaxing and difficulties doing so

Working with the BRAC cycle involves:

- Doing 90 minutes of purposeful work and then taking a 15 minute break
- During this 15 minute break, activities likely to stimulate right hemisphere functioning are undertaken, for example:
 - ✓ Listening to music
 - ✓ Drawing
 - ✓ Looking at photographs
 - ✓ Giving yourself a hand massage
 - ✓ Completing breathing exercises
 - ✓ Relaxing the neck and shoulders through stretching
- Return to normal duties following this break
- Repeat 90/15 cycle throughout work day
- Try to avoid stimulants during your break e.g. caffeine

List some activities that you plan to schedule into your 15 minute breaks.

UNSOLVABLE PROBLEMS

We all have unsolvable problems. These might be things which we have to do, or they might actually be someone else's problem and the only control we can have over them is what we tell ourselves or how we feel.

Examples include:

- General duties
- Watchkeeping
- Being at work on time
- Working in confined environment
- Working back late
- Separation from family and friends

These may not be a problem for you but if you have a problem which either:

- Cannot be solved
- Or is not yours to solve

You need to do three things:

1. Identify it as an unsolvable problem.

- Nothing you can do about it
- Someone else's problem

2. Do something which will distract you from the problem, which is:

- Simple
- Doesn't cost money
- Is in your control

Examples of the kinds of distractors which other people have found helpful include:

- Singing along to music
- Talking to a friend **NOT ABOUT THE PROBLEM**
- Reading something else
- Writing something else

Distraction techniques are used in the face of a stressor and are most effective when there is verbal or written output for around 3-5 minutes.

Even when you identify the problem is not within your control and distract, it is still likely to cause a level of stress/distress. When you have unsolvable problems, in addition to distracting yourself, you also need to do compensatory activities.

3. This involves doing something which makes you feel good about yourself.

You need to find things which will 'compensate' or make you feel better when you have had a rough day.

Compensatory activities are usually done after a stressor has occurred, or at the end of a rough day. Effective compensatory activities make you feel better directly after doing them. They may be purely pleasurable or purposeful (making you feel competent and efficient) or they may remind you of a sense of inner strength or something about yourself which you like.

For example:

- Completing other work that you are good at
- Challenging a crew member to a game that you play well
- Reading a good book
- Computer games
- Physical activity e.g. push-ups, sit-ups, cycling, rowing, hand-weights
- Listening to your favourite music
- Watching videos
- Playing games e.g. cards

To identify effective compensatory activities, as you go through the next week schedule some of these.

Do a before and after check of how you are feeling as you do the things which you think you enjoy and would be compensatory. Notice which activities make a positive difference. **Record this on the COMPENSATORY ACTIVITY WORKSHEET.**

Also be aware that otherwise neutral activities can sometimes take on compensatory value because of how you perceive them e.g. washing your basics = purpose, competence, efficiency

When you are bothered by an unsolvable problem, make sure you do at least one of these things. Sometimes you may need to do more than one thing. The aim is to get you back to feeling good about yourself and calm within yourself.

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LEARNING TO COPE WITH STRESS

DATE	STRESS 0-10	THOUGHTS: WHAT DID YOU TELL YOURSELF	SENSATIONS: WHAT HAPPENED IN YOUR BODY	WHAT YOU DID: HOW YOU HANDLED THE SITUATION	WHAT OTHERS DID: HOW THEY REACTED TO YOU	GOOD COPING SCORE 0-10

PROBLEM:

LEARNING TO COPE WITH STRESS

--	--	--	--	--	--	--

PROBLEM:

SUBMARINER

HEALTH AND

WELLNESS

WORKBOOK

SUBJECT NO: _____

WEEK 1

TASKS

PRIORITY PROBLEMS WORKSHEET

Solvable/Unsolvable

Job-Specific Stress

_____	_____
_____	_____
_____	_____
_____	_____

Role Stress

_____	_____
_____	_____
_____	_____
_____	_____

Interpersonal Stress

_____	_____
_____	_____
_____	_____
_____	_____

Career Development

_____	_____
_____	_____
_____	_____
_____	_____

Home-Work Conflict

_____	_____
_____	_____
_____	_____
_____	_____

Environmental Conditions

_____	_____
_____	_____
_____	_____
_____	_____

Other

_____	_____
_____	_____
_____	_____
_____	_____

SELF REPORT VISUAL ANALOGUE SCALE OF RELAXATION

Please place a mark somewhere along this line to indicate your current level of relaxation.

Deeply and
completely
relaxed

Tense and
upset



‘Deeply and completely relaxed’ means you feel extremely relaxed throughout your body – with your breathing somewhat slowed, your body quiet and your muscles feeling loose.

If you feel more relaxed than usual (but perhaps just in some parts of your body and not all your body) place a mark somewhat closer to the mid-point.

The mid-point of the line should indicate feeling your usual resting state – neither tense nor relaxed.

If you feel more tense than you usually do (perhaps in some parts of your body and not others) place a mark further along the line towards ‘tense and upset’.

‘Tense and upset’ means you feel extremely tense throughout your body – with shallow breathing, your body agitated and your muscles feeling tight.

RECORD OF RELAXATION PRACTICE

During the course of the skills training program, it is recommended that you practice your relaxation exercise on a daily basis to gain the most benefit.

For each time that you practice your relaxation exercise, record your level of anxiety, both before you practice and after you've finished, in the table below.

If you do not practice your relaxation exercise on a particular day, still rate your anxiety level for that day in the ANXIETY – BEFORE column, and mark an 'X' in the ANXIETY - AFTER column.

Remember '0' indicates '*no presence of anxiety*', and '10' indicates '*very high/severe anxiety*'.

Week 1	ANXIETY – BEFORE (0 – 10)	<i>ANXIETY – AFTER</i> (0 – 10)
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Saturday		
Sunday		

PERSONAL QUESTIONNAIRE

1. SYMPTOMS

- Somatic complaints (e.g. headaches; tightness in neck & shoulders; sleeping difficulties)
- Worry (e.g. my time I spend worrying)
- Tension-anxiety (e.g. my keyed up feeling)
- Avoidance
- Cognitive impairment (e.g. my difficulty concentrating)

2. MOOD

- Depression (e.g. loss of interest in previously enjoyed activities; my feeling sad)
- Heightened emotions
- Instability of mood (e.g. my grumpiness; upset easily)
- Loss

3. SELF-ESTEEM & SELF-EFFICACY

- Confidence (e.g. my shyness)
- Worthlessness
- Negative global self-evaluations (e.g. feeling like I'm no good)
- Self-consciousness (e.g. my oversensitivity to criticism)
- Social inferiority

4. RELATIONSHIPS

- Difficulties or distress in relating to other people (e.g. my worry about relationships)

5. SPECIFIC PERFORMANCE

- Lack of competence affecting fulfilment of specific role requirements or functions (e.g. time it takes me to make decisions; my difficulty in asserting myself)

COMPENSATORY ACTIVITY WORKSHEET

STRESS BEFORE 0-10	COMPENSATORY ACTIVITY	STRESS AFTER 0-10

Appendix L

Paced Diaphragmatic Breathing Script

Initial Instructions:

Begin by lying down and placing yourself in a comfortable position. Rest your head on the pillow provided; let your feet drop gently outwards in a naturally relaxed position; and keep your head and neck in a straight line.

Script for Relaxation:

Begin by placing one hand on your chest, and the other on your abdomen. Close your eyes and notice when you breathe in the muscles in your chest expand and get tighter and when you breathe out the muscles loosen as you let go of the air. It's an automatic response to loosen the muscles each time we breathe out (allow 5-6 inhalations/exhalations).

Just notice the normal rhythm of your breathing and let your mind settle on the part of breathing out. Every time you breathe out enjoy relaxing along with those muscles that are naturally and automatically relaxing (allow 5-6 inhalations/exhalations).

Without pushing, let as much air as possible out of your mouth to empty your lungs. Now breathe in lightly through your nose, letting the breath slowly and gently move right down in to your diaphragm, so that your chest hardly moves and certainly does not rise as much as your stomach. Then exhale slowly and gently to release all the air. Just pause for a moment before taking another breath ... once again in through the nose, slowly and gently right down to your diaphragm and then slowly exhale 2.3 and pause.

Breathe in 2.3 down to your diaphragm
And out 2.3 to release the air and pause

In 2.3

Out 2.3 and pause

In 2.3

Out 2.3 and pause

In 2.3

Out 2.3 and pause

Just continue your breathing ... in 2.3 with the air going down to the diaphragm and out 2.3, pause

In 2.3 ... out 2.3 and pause

Now as you breathe in 2.3 tell yourself to relax 2.3 as you breathe out

In 2.3 ... relax 2.3 and pause

In 2.3 and relax 2.3 and pause

In 2.3 ... relax 2.3 and pause

In 2.3 ... relax 2.3 and pause

In 2.3 ... relax 2.3 and pause

In 2.3 ... relax 2.3 and pause

In 2.3 ... relax 2.3 and pause

In 2.3 ... relax 2.3 and pause

In 2.3 ... relax 2.3 and pause

In 2.3 ... relax 2.3 and pause

Breathe with calm, regular breaths and feel how you relax more and more every time you breathe out ... just let go

As you breathe outrelax your forehead
 relax the muscles around your eyes
 relax the muscles around your mouth

(5 seconds later) relax your neck
 shoulders (with the sound of an exhalation on the tape)
 arms
 all the way out to your fingertips

Breathe calmly and regularly with your stomach all the time. In 2.3 ... out 2.3

As you breathe out ... relax your chest
 (5 seconds later) your stomach

your waist
 your back

As you breathe out relax the lower part of your body ...

(5 seconds later) your behind
 your thighs
 your knees
 your calves
 your feet
 all the way down to the tips of your toes

Breathe calmly and regularly and feel how you relax more and more with each breath out. Take a deep breath and hold your breath for a couple of seconds now let the air out slowly slowly and notice you relax more and more

Now as you breathe out say the number 10

Now as you breathe out say the number 9

8

7

6

5

4

3

2

and 1

This time when you breathe out ... relax your eyelids feel how relaxed they are... now breathe out and let this feeling drift downward towards your toes... with each breath out notice the relaxation in your scalp (breathe out) your forehead (breathe out) your eyes (breathe out) around your mouth (breathe out) in your neck and shoulders (breathe out) down your arms (breathe out) in your hands. Now notice the feeling of relaxation in your chest (breathe out) and let this feeling of relaxation spread to your stomach (breathe out) your waist and back (breathe out) down your legs (breathe out) your knees (breathe out) your calves and ankles (breathe out) and down into your toes (breathe out).

Standard script to reorient after relaxation:

Now become aware of the floor and pillow supporting you ... when you are ready just move and stretch...and then when you are ready open your eyes and slowly look around the room to reorient yourself....When you feel ready just slowly sit up and sit quietly for a few minutes.

Appendix M

BRS SCORE SHEET

SUBJECT NO: _____ BREATHING BASELINE: _____

INTERVALS

	1			2			TOTAL
	-		+		-		
Breathing	-		+	-		+	
Quiet	-		+	-		+	
Body	-		+	-		+	
Head	-		+	-		+	
Eyes	-		+	-		+	
Mouth	-		+	-		+	
Throat	-		+	-		+	
Shoulders	-		+	-		+	
Hands	-		+	-		+	
Feet	-		+	-		+	
							Score

Appendix M

Appendix N

Program Evaluation

At the end of treatment, subjects completed a brief program evaluation questionnaire about their personal experiences of the training. Subjects were asked the following questions:

- 1) Which aspect/s of the training do you feel you benefited from the most and why?
- 2) Which aspect/s of the training do you feel you benefited from the least and why?
- 3) Would you change anything about the training program? If so, what and why?
- 4) How best do you think this program could be utilised to assist submariners?

The parts of the program that were identified as most beneficial were:

- The group interaction; opportunities to help each other; more than paper training
- Identification of stressors and developing alternative ideas to cope with solvable problems
- Breathing exercises
- Compensatory activities – providing chance to unwind; rating of these activities was found useful

The least beneficial parts were:

- Having group sessions for all parts; some one-on-one was suggested
- Education – for those who have had prior exposure to similar information
- Surveys
- Difficulties completing some of the exercise sheets due to the boat's program

Suggested changes included:

- Having more support from the Submarine Squadron in terms of programming such training (set times and days organised by the boat, rather than by participants) without the workload increasing (i.e. not being penalised for attendance)
- Timing – not during workups or high activity maintenance periods

Suggestions for how best to use such training included:

- Prior to workups or in harbour training weeks
- Having a lecture during harbour training week
- Prior to long deployments
- Shortening the course length and presenting certain sections in 1 hour blocks as part of harbour training week
- For specific work groups
- Conducted at sea

Appendix O

Control Study

O11.0 Introduction

Of the four boats that were investigated in this study, two were selected as control boats and two were designated as treatment boats. Of the participants serving on the control boats, five subjects also went on to complete the skills training at the completion of the control period. A separate examination of the intervention was conducted using the two sets of data for these 'wait-list' subjects.

O11.1 Data Analysis

Data from the pre and post-test waitlist period was compared with data from the pre and post-test intervention period. Scores from pre to post-test during the wait-list period were expected to show little change, whereas pre to post-test scores from the intervention period were expected to show improvement. Paired samples t-tests were computed because the sample was too small for a full ANOVA. Table O1 shows the findings for each of the outcome measures.

Table O1**Descriptive and Statistical Findings for the Dependent Variables During the Wait-List Control Period versus the Intervention Period**

	Intervention		T-Test	Control		T-Test
	Pre	Post		Pre	Post	
Measure	Mean (SD)	Mean (SD)		Mean (SD)	Mean (SD)	
DASS						
Depression	7.20 (6.42)	2.60 (2.30)	1.51	7.20 (6.42)	6.20 (6.30)	1.41
Anxiety	3.40 (3.97)	1.40 (1.67)	1.29	3.40 (3.97)	3.20 (4.32)	0.53
Stress	10.20 (4.44)	5.00(2.64)	2.52	10.20 (4.44)	8.00 (3.81)	1.97
PSQ						
Vocational Strain	20.80 (3.70)	17.40 (4.28)	2.37	20.80 (3.70)	23.60 (5.73)	-1.70
Psychological Strain	23.80 (4.21)	17.20 (3.63)	1.99	23.80 (4.21)	23.40 (5.81)	0.26
Interpersonal Strain	23.60 (4.04)	18.80 (1.64)	2.90*	23.60 (4.04)	25.60 (5.59)	-1.35
Physical Strain	25.00 (8.91)	20.20 (4.26)	1.60	25.00 (8.91)	25.20 (5.89)	-0.05
ORQ						
Role Overload	29.80 (5.49)	22.00 (3.94)	2.98*	29.80 (5.49)	29.40 (5.17)	0.43
Role Insufficiency	29.20 (3.77)	29.00 (5.61)	0.07	29.20 (3.77)	30.60 (8.90)	-0.35
Role Ambiguity	29.20 (5.80)	23.00 (7.14)	3.34*	29.20 (5.80)	25.60 (3.91)	1.33
Role Boundary	23.80 (1.30)	19.40 (3.51)	2.47	23.80 (1.30)	23.80 (3.56)	0.00
Responsibility	26.00 (6.96)	26.20 (9.28)	-0.15	26.00 (6.96)	26.40 (9.34)	-0.26
Physical Environment	24.00 (8.45)	20.60 (9.39)	0.97	24.00 (8.45)	28.00 (12.78)	-1.40
PRQ						
Recreation	20.40 (3.97)	22.00 (5.29)	-0.46	20.40 (3.97)	18.80 (4.44)	0.78
Self-Care	17.20 (3.56)	24.00 (5.48)	-3.96*	17.20 (3.56)	22.20 (7.46)	-2.02
Social Support	35.40 (5.17)	39.40 (5.68)	-0.90	35.40 (5.17)	35.60 (5.68)	-0.08
Rational Coping	35.00 (3.81)	32.40 (8.85)	0.54	35.00 (3.81)	33.20 (4.71)	1.18
Job Satisfaction	3.20 (0.84)	3.60 (0.89)	-0.59	3.20 (0.84)	3.00 (1.00)	0.41
Job Performance	3.60 (0.55)	4.00 (0.00)	-1.63	3.60 (0.55)	3.40 (0.55)	1.00
General Wellbeing	31.60 (4.67)	24.80 (1.30)	3.79*	31.60 (4.67)	27.60 (4.23)	3.07*
Health	2.60 (0.98)	3.00 (0.00)	-1.00	2.60 (0.89)	2.60 (0.89)	0.00
Sickbay Attendance	1.60 (1.81)	1.00 (1.22)	0.80	1.60 (1.81)	1.60 (2.51)	0.00

* $p < .05$ (without Bonferroni correction)

Note. None of the t-tests were statistically significant after Bonferroni correction

All mean ratings were in the normal ranges at pre and post-test, except for role ambiguity, which was above 60T at pre-test indicating mild levels of maladaptive strain, and recreation at the end of the waitlist period which was less than 39T, indicating mild deficits for this coping resource. Mean score for self-care (M=17.20) at pre-test was approaching a mild deficit (39T, score of 17). Similarly vocational strain score at the end of the waitlist condition was nearing maladaptive levels. Mean

ratings for job satisfaction, job performance, general wellbeing, health, and sickbay attendance improved during the intervention period. During the waitlist period, job satisfaction and job performance decreased, health and sickbay attendance showed no change, and general wellbeing improved.

Except for general wellbeing, none of the t-tests comparing pre and post test results for the waitlist period were statistically significant. This was as expected. General wellbeing improved during both the waitlist and intervention period. During the intervention period, there were significant changes in Interpersonal Strain [$t(4) = 2.90, p < .05$, without Bonferroni correction], Role Overload [$t(4) = 2.98, p < .05$, without Bonferroni correction], Role Ambiguity [$t(4) = 3.34, p < .05$, without Bonferroni correction], and Self-Care [$t(4) = -3.96, p < .05$, without Bonferroni correction]. Interpersonal strain decreased significantly following the intervention, whereas mean ratings increased slightly during the waitlist period. Strain in the areas of role overload and role ambiguity also decreased significantly following the intervention. The intervention was successful in reducing role ambiguity from maladaptive levels at pre-test to within the normal range at post-test. Subjects' use of self-care techniques increased significantly as a result of the intervention.

An unexpected finding was obtained on the Rational Coping subscale of the PRQ, which decreased over both the intervention and waitlist period but slightly more so for the intervention. However, when comparing rational coping scores from this sample group to the pre and post-test scores of the entire sample group (Table 25, Chapter 8), the pre-test values of this group were higher initially and the decreases at post-test matched that of the entire sample group (interventions and controls) at post-test.

O11.2 Discussion

When examining the mean ratings, the trends in the data would suggest that the intervention had an impact in this small group who completed both the waitlist and intervention conditions. Statistical analyses lend some support to this view, with only one significant change occurring during the waitlist period, although less so than during the intervention period, whereas significant improvements were made in the areas of interpersonal strain, role overload, role ambiguity, self-care, and general wellbeing following the intervention. These changes were observed at both the nonclinical and clinical levels. This supports a previous review of 64 work-site stress management interventions, which reported that despite greater difficulties in detecting statistically significant effects in subjects with normal symptom levels, that more than three-quarters of the prevention-oriented studies reported positive results (Murphy, 1996). Statistical findings of this 'sub-study' should be considered to be exploratory due to the small sample size. However, data trends support earlier recommendations (Chapter 7, Study 3) that some form of formal intervention is required to facilitate change for those reporting maladaptive levels of strain.

Appendix P

Technical versus Non Technical Findings

Table P1

Category Differences in Work Factors

Item	Non Technical Mean (SD)	Technical Mean (SD)	Mann-Whitney U
Years in Navy	9.31 (5.10)	8.99 (4.71)	-0.22
Submarine Service Years	5.58 (5.21)	5.50 (4.60)	-0.11
Current Posting Months	14.39 (12.26)	11.83 (9.02)	-0.61
Manpower/ Working Hours			
Current manning levels mean I don't get enough shore time to recover	3.28 (1.16)	3.81 (1.00)	-1.84
We have enough personnel to ensure the job gets done properly	2.93 (1.03)	2.52 (1.09)	-1.46
I can't perform my job effectively due to current manning levels	2.69 (1.04)	3.04 (0.98)	-1.52
In general, I am happy with my current working hours	3.03 (1.15)	2.74 (0.98)	-0.97
I don't get to spend enough time with my family and friends	3.62 (0.98)	3.96 (0.98)	-1.37
Constant changes to the work schedule make it difficult to plan family or leisure activities	4.03 (1.05)	4.22 (1.01)	-0.71
Working alongside gives me a break in my workload	2.28 (1.03)	2.37 (1.21)	-0.09
Training & Preparation			
Prepared to meet operational requirements	3.24 (0.83)	3.22 (1.12)	-0.07
Prepared for technical / specialist aspects	3.41 (0.78)	3.00 (1.04)	-1.58
Prepared for lifestyle changes	3.31 (0.76)	2.70 (0.91)	-2.37*
Job Demands			
Mental and perceptual activity	3.90 (1.05)	4.07 (0.78)	-0.43
Physical activity	2.83 (1.00)	2.81?????	-0.02
Time pressure	3.41 (0.87)	3.78 (0.89)	-1.53
Hard work	3.69 (0.93)	3.81 (0.83)	-0.55
Frustrations on the job	2.83 (1.04)	3.30 (1.14)	-1.67

(Table P1 continued on pp. 229)

Item	Non Technical Mean (SD)	Technical Mean (SD)	Mann-Whitney U
Submariner Views			
Crew works well as a team	4.03 (0.78)	3.85 (0.91)	-0.68
COLLINS submariners perceived as elite	3.10 (1.01)	2.63 (1.18)	-1.50
Little teamwork & cooperation among crew	1.86 (0.74)	2.07 (0.96)	-0.65
Closest relationships with people I work with	2.69 (1.10)	2.63 (0.97)	-0.14
Negative media attention makes work less satisfying	3.00 (1.13)	3.07 (1.23)	-0.24
Media attention on 'problems' blown out of proportion	4.10 (0.90)	3.78 (1.08)	-1.16
Submarine doesn't meet safety requirements	2.62 (1.08)	2.85 (1.23)	-0.60
No major safety concerns at sea	3.38 (1.08)	3.04 (1.34)	-0.79
Work on submarine is mentally exhausting	3.69 (0.93)	3.74 (1.13)	-0.47
Electronic monitoring of performance makes me nervous	2.52 (0.83)	2.19 (0.83)	-1.48
Able to remain focussed on job while on duty	3.97 (0.56)	3.59 (1.01)	-1.52
Enough support alongside to maintain submarine	2.62 (1.08)	2.37 (1.00)	-0.87
Squadron internal communication is effective & fosters teamwork	2.66 (1.08)	2.33 (0.88)	-1.18
Last minute changes to work schedules	3.76 (0.91)	4.00 (1.00)	-1.11
Separation from extended family making it difficult to do job	2.62 (1.05)	3.04 (1.12)	-1.50
Separation from extended family making it difficult to relax	2.48 (1.02)	3.11 (1.01)	-2.36*
Separation from friends making it difficult to relax	2.55 (1.02)	2.96 (0.90)	-1.96*
Separation from immediate family making it difficult to do job	2.93 (1.10)	3.37 (1.11)	-1.54

* $p < .05$ (without Bonferroni correction)

** Significant after Bonferroni correction

Table P2**Job Category Differences for the Dependent Variables**

Item	Non Technical Mean (SD)	Technical Mean (SD)	Mann-Whitney U
DASS			
Depression	3.42 (3.96)	5.56 (5.59)	-1.30
Anxiety	1.18 (2.02)	4.76 (6.44)	-3.42**
Stress	5.96 (5.71)	9.96 (8.53)	-1.70
ORQ			
Role Overload	26.62 (6.93)	29.63 (7.61)	-1.25
Role Insufficiency	26.31 (7.22)	29.22 (5.41)	-1.58
Role Ambiguity	23.65 (6.04)	24.52 (6.49)	-0.52
Role Boundary	22.58 (5.54)	23.96 (5.53)	-0.88
Responsibility	26.89 (9.05)	27.07 (7.73)	-0.26
Physical Environment	22.72 (6.15)	27.04 (7.65)	-2.22*
PSQ			
Vocational Strain	20.39 (5.25)	20.80 (5.58)	-0.51
Psychological Strain	20.39 (6.26)	23.68 (9.08)	-1.19
Interpersonal Strain	21.64 (5.38)	22.32 (7.47)	-0.17
Physical Strain	19.21 (5.68)	24.52 (9.76)	-2.02*
PRQ			
Recreation	24.14 (6.42)	23.70 (5.52)	-0.23
Self-Care	21.03 (5.45)	20.48 (5.81)	-0.41
Social Support	37.31 (10.25)	34.85 (8.70)	-1.01
Rational Coping	31.65 (6.67)	31.37 (6.28)	-0.30
Job Satisfaction	3.31 (1.23)	3.04 (0.90)	-1.00
Job Performance	4.03 (0.50)	3.81 (0.92)	-1.09
General Wellbeing	27.03 (7.42)	31.04 (9.98)	-1.49
Health	2.72 (0.80)	2.41 (0.80)	-1.59
Sickbay Attendance	0.55 (0.98)	1.04 (1.37)	-1.49

* $p < .05$ (without Bonferroni correction)

**Significant after Bonferroni correction