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

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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.

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CHAPTER 9

9.0 General Discussion

This study investigated work stress and coping in operational Royal Australian Navy submariners. Common sources of work stress were examined, as well as symptomatology, strain factors, health and wellbeing, coping techniques, and the impact on the workplace in terms of job satisfaction, job performance, and 'absenteeism'. A multimodal cognitive behavioural stress management program was implemented whilst the submariners were working alongside. Submariners from four boats participated in this study with two designated as 'controls' and two as 'treatment' boats. Control subjects were invited to undertake the program after the wait-list period. Data was collected at four different stages – baseline sea, baseline alongside/pre-test, post-test, and follow-up. A total of 75 male submariners participated with numbers varying at each stage due to posting changes, leave, training commitments, and attrition. Sixteen subjects completed the intervention.

In assessing the outcomes, the findings were broken down into four separate studies. The first compared historical findings from Brown's (1999b) study with current findings. Several of the measures were taken from Brown's study to allow direct comparisons. This enabled an examination of the effectiveness of the Navy's efforts to improve the Service, the impact of the change over to COLLINS class boats, and the impact of becoming fully operational. The second study comprised categorical comparisons between rank groups, marital status, job frustration, and coping techniques, and investigated associations with time spent in current posting, in Submarine Service and in the Navy. Data collected at the baseline measurement

points were compared in the third study. The fourth and final study investigated the impact of the intervention between pre and post-test, and post-test and follow-up.

9.1 Summary of Key Findings

The major findings from these investigations are summarised below. During the interval since Brown's study was conducted, the Navy has been successful in reducing the impact of manning and hard work required, and there was a change in submariners' perceptions of negative media attention. Increased contractor support alongside, and the introduction of the Enhanced Selection Process (Defence Instructions – Navy Personnel, 2003) may have contributed to these changes. However, it should be noted that despite some improvement, attitudes and views remain largely unfavourable and continued organisational efforts are required to further improve conditions. Previously, submariners were required to have completed one year's sea service in the surface fleet before being able to apply for Submarine Service. This is no longer a requirement, resulting in greater eligibility and a larger pool of potential applicants. In more recent times, personnel undertaking recruit and category training have been able to apply, further broadening the pool of applicants. In going one step further to push the recruitment drive for critical categories, applicants are being sought through direct entry (i.e. as civilians). All of these strategies are designed to increase recruitment into Submarine Service and address critical manning issues.

Key areas of dissatisfaction were short notice changes to programs, long working hours, and difficulties planning family and leisure activities. It was identified that

submariners were seeking greater stability and predictability. Some concerns were raised regarding training, and a proportion of subjects felt poorly prepared.

Common findings across the studies were that although symptoms and stressors abated somewhat with coming alongside, this in itself was not sufficient to reduce maladaptive strain or clinical symptoms. The intervention used in this study was successful in reducing stress, vocational strain, interpersonal strain, and role overload strain while alongside. It also improved use of social support and job performance ratings. This was achieved for subjects at both clinical and nonclinical levels. Such findings support the use of a program of this kind in a preventative and treatment nature. Brown (1999b) recommended a program covering a broad complement of techniques. This was found to be beneficial in the present study from both a statistical and anecdotal viewpoint. In particular, including a problem solving component involving personally relevant problems may have been vital to its success. Such strategies were included in the Submariner Health and Wellness program. Additionally, use of the Basic Rest Activity Cycle covered breaks in workload. The intervention also encouraged regular changes of posture, and promoted the relaxation response, which have been found to be beneficial in improving performance. Such improvement was detected in this study.

A strong conclusion drawn across the studies was the need for increased recreational activity to improve general attitudes and views of Submarine Service, reduce stress, strain and frustrations, reduce need for recovery, and improve health and work outcomes. This was seen to be particularly important for Officers and Senior Sailors and married personnel. It was also considered beneficial for coping with enforced

separation where access to usual social supports is reduced. Job frustrations were related to a number of negative aspects and attitudes, such as dissatisfaction with working hours, negative impact from manning and frequent work schedule changes, greater time pressures, and insufficient time with family and friends. It was also associated with increased stress and strain. These negative aspects were linked to lack of opportunity for recreation. Intervention subjects expressed many frustrations in their work. Some of these were dealt with via problem solving, and for problems out of their control, the submariners were taught distraction techniques, and encouraged to engage in compensatory activities.

Another interesting finding was that degree of job satisfaction did not play a role in those seeking treatment. Prior research has linked job dissatisfaction to many work outcomes, such as lack of commitment, intention to quit, turnover, absenteeism, and such psychological outcomes as stress, burnout and poor health (Beehr, 1995; Becker & Billings, 1993; Brough & Frame, 2004; Cooper & Payne, 1988; Fuller et al., 1996; Horn et al., 1992; Kocher & Thomas, 1994; Kopelman et al., 1992; Lakhani, 1991; Mitra et al., 1992; Mor Barak et al., 2001; Prevosto, 2001; Rice, 1999; Tai et al., 1998; Tett & Meyer, 1993; Vandenberg & Nelson, 1999; Williams & Livingstone, 1994). In this group of subjects, job performance and sickbay attendance may have contributed to self-selection for treatment. This may be due to the potential negative effect of these indicators for working as part of a team and maintaining status and camaraderie.

Although short-term benefits were achieved alongside through the intervention, these were not sustained at sea. Alternative techniques need to be utilised at sea. Reported

lack of opportunities and support would suggest that not only providing stress education to the supervisors but also training them in the techniques would be important to increase understanding and support, particularly for techniques such as the Basic-Rest-Activity-Cycle. This would also create greater continuity in learning and practice. Provision for a variety of recreational and physical resources and activities, with more scheduled practice may also help. Different types of relaxation techniques could also be trialled to suit individual needs. Some of the subjects reported benefits from working in a group setting. However, there are fewer opportunities for this to occur in the sea-going environment. Having a 'stress buddy' may help for motivation, sharing of ideas, problem solving work stress issues, and for receiving feedback and encouragement.

9.2 Methodological Issues

Following through the same group of submariners over an extended period of time proved to be quite challenging for several reasons. When the boat comes alongside it provides an opportunity for submariners to take leave or to complete further training requirements. It is also a chance to change-over some of the crew. Maintenance periods are an extremely busy time onboard; thus, time to participate became an issue. Attrition through lack of motivation or interest was also a problem.

To implement a program of this length is also difficult, as the boats' work schedules can change at short notice. Opportunities to implement are also limited, depending on the boat's stay and program alongside.

The response rate was identified as low but consistent with military response rates, which have markedly decreased over the years. Potential participants were told of

opportunities for group feedback and individual feedback to improve subjects' attitudes towards survey participation and the role of psychological research. This study covered a number of work and individual outcomes, made historical and categorical comparisons, and collected data in different working environments (at sea and alongside), resulting in a number of questionnaires to complete. This may have been too cumbersome for subjects, thus decreasing continued subject participation. Other strategies suggested by Navy personnel for improving response rates in future studies are to use short concise surveys, have more consistent Command involvement, provide incentives for participation, and survey online (Newell et al., 2004).

The small sample size in the latter stages may have limited chances of detecting significant effects of treatment. Increased support from Command and scheduling skills training into the boat's program would be needed to improve subject participation. It also seems that the application of intervention techniques declined with a return to sea. Submariners may require ongoing assistance at this stage, given the environmental and work role changes, to maintain gains made alongside.

All the outcome measures used in this study were self-report and there were no objective measures of organisational outcomes. However, much prior research has utilised self-perceptions of stressors and outcomes (Beehr & Newman, 1998; Jex, 1998; McGrath, 1976), and reliable and valid measures were used in this study. Self-report measures can be limited by memory decay, social desirability and evaluation apprehension (Whitley, 1996). Subjects were asked to respond retrospectively over just the past two weeks to reduce the influence of memory decay by asking about

more recent thoughts, feelings and behaviours. Measures were taken to ensure anonymity of data to reduce social desirability effects. Self-reports are advantageous in that they are a direct way of obtaining information that may not be able to be observed directly (e.g. views and beliefs). They are also easy to collect and can be administered in large groups (Whitley, 1996), as was conducted in this study.

With regards to the intervention, relaxation training was found to be effective in terms of the Visual Analogue Scale. Relaxation training has been identified in earlier research as the most effective treatment for physiological outcomes (Murphy, 1996).

As noted earlier, the large number of multiple comparisons conducted across each of the studies, can increase the likelihood of Type I errors. Bonferroni corrections were calculated to reduce this and identify more robust findings.

Finally, correlation coefficients were used to detect certain relationships but this does not determine causality and possible alternative explanations cannot be ruled out. However, correlations were useful in gathering information on variables that could not be manipulated in the natural environment (such as increasing strain, sickbay attendance, or number of years service), as in this study.

9.3 Recommendations

9.3.1 Training/Preparation

Organisational efforts need to be focussed on reducing training in billet, demonstrating attitudinal change, altering incorrect perceptions of prior knowledge, and having sufficient information and training resources onboard. Improving training

and preparation, in conjunction with activity development and goal setting, may also be important in helping to reduce boredom and job repetitiveness. Given that Officers and Senior Sailors consistently report experiencing higher strain and pressure, the organisation may need to consider reviewing their roles. The introduction of Coxswains onboard to share some of the workload of the Chief of the Boat is a step in the right direction.

Provision of refresher leadership and management training with a focus on performance, conflict management, critical incidents and dealing with organisational change would also be of benefit for this subgroup of submariners. In addition, education regarding stress and wellbeing in the workplace, that is specific to submariners, could help to increase awareness and lead to early detection of symptoms and provision of appropriate support. Continued focus on manning is also of priority. This needs to be achieved not only through recruitment but also through ongoing improvement of conditions to enhance retention.

9.3.2 Attitudes & Views

The findings indicated that personnel have a need to be ‘heard’ by the organisation, particularly in managing work-related frustrations, and need to be reassured that follow-up action will be taken and/or they will be supported. Regular focus groups or specifically devised divisional meetings could be initiated to include personnel across ranks and categories to gain input and collective ideas for improvement. This may also facilitate a change in personnel views of Submarine Service and its internal communication (identified as important by subjects in this study), and a willingness

to support its personnel. Regular reviews of progress with such matters would also be required with feedback and further input to personnel.

To maintain the elite status of the Service and to enhance pride, it is suggested that maintaining a level of exclusivity is important so that submariners remain distinct from other naval personnel. This is similar to what occurs with Special Air Service Regiment (SASR) personnel, who have a strong sense of pride, camaraderie and job satisfaction that matches the elite and unique nature of their work. Recognition for efforts would also be important in improving submariners' attitudes and views, and changing public perceptions.

9.3.3 Coping with Separation

Whilst at sea, additional strategies to cope with separation need to be employed by both the individual and the organisation. Keeping personnel updated with events at home and providing resources for communication with families can facilitate coping with separation. There are arguments for and against email, as a form of communication on submarines. This study suggested that the costs, such as the inability to actively respond to 'home' issues, the potential for misunderstanding/misinterpretation in communications, and possible feelings of helplessness and frustration, may outweigh the benefits. However, more information directly related to this issue may need to be gathered from personnel before drawing any firm conclusions. A Family Gram, which is a number coded form of communication (numbers represent phrases about family life) received by the member from their family, has been frequently used. With the introduction of reverse family grams (i.e. the submariner can respond to his family), the communication

flow between personnel and families has increased. This still differs to email in that the information communicated is more limited and is translated by a communicator onboard and therefore is not as private. These limitations reduce the likelihood of ongoing family arguments that can often happen with email, and usually result in distress for the member who is helpless to act.

The Defence Community Organisation is also attempting to initiate a Family Readiness Plan aimed at identifying those in need, and putting into place measures to better prepare personnel for the deployment and families for the separation. This will likely be facilitated by Heads of Department, though it is still in the planning stages. It is based on a model utilised in Darwin, which has reportedly had some success. Pre-deployment briefs will also aid better planning and preparation by the boats and may encourage better help-seeking behaviours and identification of potential problems.

9.3.4 Wellbeing

In the case of personnel presenting with maladaptive strain or clinical symptomatology, intervention is required to effect change. Submariners need to be further encouraged in help-seeking. Participation in the Mental Health Screening (Health Bulletin, 2003b) process following deployments seems to have instigated change in this area, and further provision of better psychological health education would also be beneficial. The Submariner Health and Wellness intervention program utilised in this study resulted in some benefits alongside, and further running of this program in the future would be worthwhile. Again, this would need to be programmed into the boat’s schedule to facilitate participation and, as intervention

subjects noted, submariners should not be penalised for attendance through increased workload. However, given previously noted difficulties, implementation of the full program may be problematic. Intervention subjects suggested that elements of the training could be incorporated into their Harbour Training week. This would increase the number of personnel available, making the program more accessible, and serve as a preventative tool. Working in small groups where possible seems to be beneficial.

Some alternative strategies may need to be devised for coping at sea, particularly for emotional problems. Conducting stress management training at sea could be beneficial, as well as having full organisational support for managing stressors at sea (e.g. using the BRAC, changing body posture, recreational activity). The Physiotherapist on the Base could also be utilised to provide education and instruction in good posture and working in confined environments, which may help to reduce the likelihood of musculoskeletal complaints and risk of injury. Better planning and preparation prior to deployment is important, and prior contact with, and provision of support to families through the Defence Community Organisation's Readiness Plan may also increase coping.

The findings provided strong support for the use of recreational activity as a means of improving work factors, wellbeing and coping. To ensure opportunities for participation, and availability for all personnel, a period for recreational activity will need to be scheduled into the boat's weekly programs. This could cover physical exercise, group activities, and fun events promoting wellbeing. Customised health programs have also been identified as having benefits and could be developed by the

Physical Trainers on base. The Submarine Squadron could make this a part of the work lifestyle.

9.3.5 Selection

Some improvements in the conditions and in personnel's wellbeing and coping have occurred since Brown's study. A possible contributing factor to this may have been the introduction of the Enhanced Selection Process for entry into Submarine Service (Defence Instructions – Navy Personnel, 2003). This was not directly measured in this study and may be an area for future research to determine the effectiveness of current selection procedures.

9.4 Future Directions

Research cautions against exposure to chronic stress, which can lead to burnout. However, this study did not find any significant negative impact on work factors or psychological wellbeing from length of time spent in the posting. In fact, results showed better perceptions regarding the crew and personal performance with greater length of time in the posting. However, differences were obtained between sea time and being alongside, with symptoms being exacerbated at sea. Given this, and the lack of impact of the intervention during sea time, it would seem important to investigate this further. It is recommended that the effects of different periods away at sea be examined in relation to work and psychological outcomes. It was not possible to do this in the present study, as the boats were all away for a similar period of time. It would be useful to compare short stints of a couple of weeks, with longer stints of a month or more.

Previous research also examined different stages of the deployment and identified halfway through and towards the end of the deployment period to be significant in terms of a decline in mood, morale and team functioning (Sandal et al., 1995; Sandal et al., 1996). This should be explored with Royal Australian Navy submariners at sea, as it may provide further information on effective coping techniques, influences on mood state, and critical times for intervention and support.

9.5 Conclusion

The present study appears to be the first to investigate the impact of a work stress management program on submariners in both the onshore environment and at sea. The submarine environment presents with a unique range of stressors, and a clear need for this type of training for submariners has been identified through previous research. The gains achieved in the present study and the finding that clinical levels of symptomatology require more than just periods of respite to subside, further confirm the need for such treatment to be provided to this population. The results of this study provide a basis for continued research in this area, further development and refinement of this type of intervention program, particularly alternative techniques to be used at sea, and ongoing efforts by the Submarine Squadron to improve service conditions.