

Causes and Duration of Change Resulting from Art-Based Activities for Members of the Australian Defence Force

Tavis Watt, E. James Kehoe

Abstract

Increasingly, military personnel are being exposed to arts-based rehabilitation activities that have been demonstrated as having positive effects in reducing both depressive and anxiety-based symptoms. However, little is known about the specific processes that are engaged by these activities, as well as the duration of positive effects. This study aimed to uncover the underlying contributors to the positive effects as recalled by the military personnel who undertook a four-week program of training leading to visual, written, musical or theatrical creations, in a nonclinical setting.

The respondents reported benefits from the program, including sustained increases in behavioural activation, sense of belonging, flow and therapeutic alliance with the trainers during and following the program. Many respondents recalled that the positive effects of the program were enduring, lasting up to 24 months or longer. All four positive effects clustered strongly on a single factor. Most respondents felt they would have benefited from a follow-up activity after the conclusion of the program. Respondents who had a higher core self-evaluation score reported more benefits from the program than those who did not.

Introduction

In response to recent conflicts in Iraq and Afghanistan, established therapeutic interventions have increasingly been applied to improve veterans' functioning.¹⁻³ In the context of these therapies, there is increasing interest in the possible added therapeutic benefit of pursuing arts-based activities, including visual, written, musical and theatrical creations among both veterans⁴⁻⁶ and therapists.^{7,8}

These activities have demonstrably reduced PTSD, depressive symptoms and anxiety symptoms.⁹⁻¹² Despite these demonstrations, little is known about the processes that may underlie the changes experienced by those undertaking arts-based activities. As described below, proposed contributors have been theorised to include behavioural activation, belonging, flow and therapeutic alliance.

Behavioural activation involves an individual engaging in behaviours that reduce depressive symptoms by developing a sense of purpose, achievement and enjoyment.¹³ Depressive symptoms have been found to be particularly prevalent among military populations¹⁴ and, hence, promoting

behavioural activation from an arts-based activity may be particularly helpful.¹⁵

A sense of belonging is strongly encouraged in military training as a means to develop cohesive teams.¹⁶⁻¹⁸ Moreover, a sense of belonging is a protective factor for returned service personnel.¹⁹ Additionally, belonging may be a contributor to the effectiveness of art-based activities in improving an individual's functioning, especially if the activities involve group work or are even conducted individually in the presence of others.¹⁸

Flow entails being absorbed in a task, with the potential to lose one's sense of space and time.²⁰ It has been defined as living in the moment, providing a positive distraction thus reducing anxieties and other concerns.^{21,22} The concept of flow has been particularly theorised to underpin the effectiveness of art-based interventions.^{12,23}

Effective therapeutic relationships between a client and therapist incorporate factors such as trust and confidence in building an alliance.²⁴ These relationships have been shown to positively influence therapeutic outcomes.²⁵ Given such

relationship factors are common to most therapies and interventions, their influence in the effectiveness of arts-based interventions using nonclinical arts mentors requires investigation.

Individual differences in response to arts-based activities may include factors such as locus of control, neuroticism, self-esteem and self-efficacy. A higher-order dispositional construct combining the above factors has been identified as core self-evaluations.²⁶ They have been found to be predictors of individual success and satisfaction in the workplace.²⁶⁻²⁸ Similarly, core self-evaluations may be associated with individual differences in their experience with art-based therapy.

As outlined above, military personnel are engaging in arts-based activities to supplement established therapies, and these programs are beginning to yield improvement in the personnel undertaking them.^{5,29,30} The present research was conducted as part of the evaluation of a four-week art training program conducted by the Australian Defence Force (ADF). The program is conducted for military personnel in a non-rank environment at a university where nonclinical mentors assist wounded, injured or ill veterans in visual, written, musical or theatrical art. During the program, participants continued to have access to their regular mental health professionals as well as a nearby military hospital.

Identifying which of the above-named factors may be contributing to an enduring improvement in respondents' general mental wellbeing is the focus of the current research. Specifically, the present research addressed the following questions.

1. By participating in an arts-based program, do the respondents report experiencing benefits, in particular, an improved sense of behavioural activation, belonging, flow and/or therapeutic alliance with nonclinical art mentors?
2. If respondents experience benefits from the program, are they enduring and for how long?
3. Given the time since participating, would the respondents have benefited from periodic booster activities following the program, and if so, what would they involve?
4. Do core self-evaluations positively correlate with better mental health outcomes during and following the program?
5. Since completion of the program, what has been the respondents' general wellbeing in relation to the perceived benefits of the program?

Methods

Respondents

The final sample consisted of 31 individuals from a pool of 119 serving members of the ADF who participated in five cohorts of the Arts for Recovery, Resilience and Team Skills (ARRTS) program conducted between 2015 and 2017. Attempts were made to contact all program participants by phone in late 2018 or early 2019. However, many had discharged from the ADF and were no longer contactable. Among the 119 individuals, 61 were successfully contacted and, ultimately, 31 completed the survey. This final sample consisted of 23 males and 8 females, with 29% reporting having served in the Royal Australian Navy, 61% in the Australian Army and 10% in the Royal Australian Air Force. The ages of the respondents ranged from 20 to 50+ years in age. The time between the end of the program for each individual and their completion of the survey varied from 18 to 42 months. Specifically, there were, respectively, 16%, 26%, 10%, 23% and 26% of the respondents who reported completing the program 18, 24, 30, 36 and 42 months prior to the survey.

Materials

The survey included the following questionnaires: (1) demographic variables, including gender, age, duration of service, most recent service type (Navy, Army or Air Force) and cohort of the ARRTS Program; (2) the K10, a measure of current psychological wellbeing/distress;³¹ (3) the Core Self-Evaluations Scale (CSES), a validated tool for measuring an individual's aggregate evaluation of their locus of control, neuroticism, self-esteem and self-efficacy;^{32,33} (4) a 16-item survey (see Table 1) asked the respondents to retrospectively evaluate the positive effects of the ARRTS Program in terms of their experience of behavioural activation, belonging, flow and therapeutic alliance; (5) finally, there were nine items asking the respondents' opinions about length of the program, the possible benefit of a range of follow-up activities, the non-military environment and its instructors, the development of new relationships, the learning of new skills and the perceived overall benefit of the program.

For each item in the positive effects survey, respondents were given the options of indicating whether the item applied to them before, during and/or after the ARRTS Program. Multiple responses were allowed. For each question, the respondents were also asked, 'How long following the program did the above effect last in months?' The given response options were the effect finished at end of program:

3 months, 6 months, 9 months, 12 months and 24 months or hasn't stopped yet.

Procedure

Prior to being contacted for the survey, the respondents had undertaken a four-week, residential training program in either visual, written, musical or theatrical art, culminating in an exhibition for family, friends and senior military colleagues. The respondents' art mentors in the program were qualified instructors in each area. The respondents completed the survey online using the Qualtrics platform. The study was conducted under the Departments of Defence and Veterans Affairs Human Research Ethics Committee approval Protocol 853-17.

Statistical analyses

Planned statistical contrasts were conducted using O'Brien and Kaiser's³⁴ multivariate analysis of variance (MANOVA) method. The textual description

of the results will report the *F* statistic and its *p* value. For significant effects, the effect size (*d*) is also reported. The *d* statistic represents the median of the 95% confidence interval (CI) for the difference among the contrast-weighted means expressed in standard deviation (SD) units.³⁵ In line with Cohen's³⁶ recommendations, effect sizes of 0.20, 0.50 and 0.80 SD units were designated as small, medium and large, respectively. For correlational analyses, correlation coefficients (*r*) of 0.10, 0.30 and 0.50 were designated as small, medium and large, respectively.

Results

Positive effects

Overall, 29 of the 31 respondents reported that the program was beneficial. Table 1 shows the percentage of respondents who reported having experienced the positive effects described in each of the 16 items before, during and after participating in the ARRTS

Table 1. Positive Effects of ARRTS Program

Percentage of participants who experienced:	Before ARRTS Program	During ARRTS Program	After ARRTS Program
Behavioural Activation			
I enjoyed the activities I was involved in	26%	94%	65%
I had a sense of achievement from the activities I undertook	23%	87%	71%
I had a sense of purpose by undertaking the activities	19%	87%	65%
I used the artistic activity to avoid unpleasant feelings	19%	84%	61%
Average Behavioural Activation	22%	88%	65%
Sense of Belonging			
I felt I was accepted by the community I was in	16%	94%	61%
I felt I had close supportive relationships with others	26%	90%	58%
I felt productive	23%	90%	61%
I felt independent	23%	87%	61%
Average Sense of Belonging	22%	90%	60%
Flow			
I felt I could be fully immersed in an activity	6%	87%	45%
I felt I had energised focus	3%	84%	65%
I could lose a sense of space and time when I was absorbed in activity	19%	81%	55%
I did things instinctively and automatically without having to think	32%	65%	42%
Average Flow	15%	79%	52%
Therapeutic Alliance			
I had a good working relationship with the ARRTS staff	32%	94%	74%
The ARRTS staff empathised with me	42%	84%	65%
The ARRTS staff were genuine in relating to me	35%	90%	65%
I feel open to development and change	19%	94%	71%
Average Therapeutic Alliance	32%	90%	69%
Average All Items	23%	87%	61%

Program. Examination of Table 1 reveals that for every item the percentage of respondents reporting the feeling increased during the program and then declined after the program. The average percentage for all items, as shown in the bottom row, increased from 23% to 87%, and then declined from 87% to 61%.

To analyse this pattern, three scores were computed for each respondent, specifically, (1) the proportion of the 16 positive effects that the respondent reported experiencing before the program; (2) the proportion experienced during the program; and (3) the proportion experienced after the program. In a MANOVA comparing these three scores, there was a large and significant increase from the before scores ($M = 23\%$, $SD = 20\%$) to the during scores ($M = 84\%$, $SD = 26\%$) [$F(1,31) = 111.23$, $p < .01$, $d = 2.413$]. The respondents' after scores were also significantly higher than their before scores ($M = 65\%$, $SD =$

30%) [$F(1,31) = 13.31$, $p < .01$, $d = 0.773$]. As may be apparent, there was a significant reduction from the during scores to the after scores [$F(1,31) = 51.41$, $p < .01$, $d = 1.640$]. Subsidiary analyses on scores computed for behavioural activation, sense of belonging, flow and therapeutic alliance, yielded a virtually identical pattern of results with similar effect sizes.

Duration of positive effects

Parallel to Table 1, Table 2 outlines the reported duration of each of the positive effects. The positive effects appeared to reduce for some respondents in the three to 24 months period following the program. Nevertheless, for all items the positive effect reported by the majority of respondents ($M = 61\%$) lasted for up to 24 months or longer. For each of the four subscales (behavioural activation, belonging, flow, therapeutic alliance), an average score for

Table 2. Duration of Positive Effects

Duration of the effect experienced by participants:	End of Program	Lasted 3 Months	Lasted 6 Months	Lasted 12 Months	Lasted 24 Months or ongoing
Behavioural Activation					
I enjoyed the activities I was involved in	10%	17%	7%	7%	60%
I had a sense of achievement from the activities I undertook	10%	14%	7%	3%	66%
I had a sense of purpose by undertaking the activities	10%	21%	3%	3%	62%
I used the artistic activity to avoid unpleasant feelings	18%	7%	7%	11%	57%
Average Behavioural Activation	12%	15%	6%	6%	61%
Sense of Belonging					
I felt I was accepted by the community I was in	17%	7%	3%	10%	63%
I felt I had close supportive relationships with others	7%	3%	13%	3%	73%
I felt productive	10%	7%	7%	7%	70%
I felt independent	13%	7%	7%	7%	67%
Average Sense of Belonging	12%	6%	8%	7%	68%
Flow					
I felt I could be fully immersed in an activity	21%	10%	7%	7%	55%
I felt I had energised focus	14%	10%	3%	10%	62%
I could lose a sense of space and time when I was absorbed in activity	29%	7%	4%	7%	54%
I did things instinctively and automatically without having to think	23%	12%	0%	8%	58%
Average Flow	21%	10%	4%	8%	57%
Therapeutic Alliance					
I had a good working relationship with the ARRTS staff	20%	3%	7%	10%	60%
The ARRTS staff empathised with me	21%	7%	4%	18%	50%
The ARRTS staff were genuine in relating to me	23%	10%	0%	17%	50%
I feel open to development and change	7%	14%	7%	3%	69%
Average Therapeutic Alliance	18%	9%	4%	12%	57%
Average all factors	15%	10%	5%	8%	61%

each respondent was computed. Statistical tests on the distribution of frequencies for the averages revealed that the distributions on three of the four subscales were significantly different from a random distribution. For behavioural activation, belonging and therapeutic alliance, the χ^2 (4) was, respectively, 30.45, 28.19, 24.97, $ps < .0001$. The distribution of flow scores, while still favouring a duration of 24 months or longer in duration appeared less pronounced, χ^2 (4) = 10.77, $p < .029$.

Principal components analysis of positive effect duration

A principal components analysis was conducted on the duration of the program's positive effects. Overall, the analysis indicated one factor accounted for 96% of the duration of effects experienced by the respondents. No other factor had an eigenvalue over one. The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.64, which was above the commonly recommended value of 0.60, and Bartlett's test of sphericity was significant [χ^2 (6) = 21.94, $p < .001$].

Follow-up actions

Figure 1 shows the percentage of respondents who reported the types of preferred follow-ups. The three most-frequently preferred options were the ability to

reconnect with participants of their own program, the ability to remain connected to the benefits of art and undertaking activities that encouraged a sense of purpose. In contrast, the three least preferred follow-up activities were a catch-up with respondents from all programs, an activity which encouraged flow and a phone call from the staff on the program.

Core self-evaluations

There was a positive medium correlation between CSES (M = 37.6 SD = 9.7) and the proportion of the 16 positive effects reported by respondents that occurred during the program (M = 13.5 SD = 4.1), $r = .32$, $p < .05$, N = 31. A medium correlation was also found for CSES and the proportion of positive effects experienced after the program (M = 10.3 SD = 4.8), $r = .34$, $p < .05$, N = 31.

K10

Responses for the K10 questions were partitioned into three bands aligned with the bands used by the Joint Health Command of the ADF. 14 Among the 31 respondents, 12 (39%) were in the band considered likely to be well, with 9 (29%) considered likely to have a moderate disorder, and 10 (32%) considered likely to have a severe disorder. The corresponding percentages from the overall ADF population are

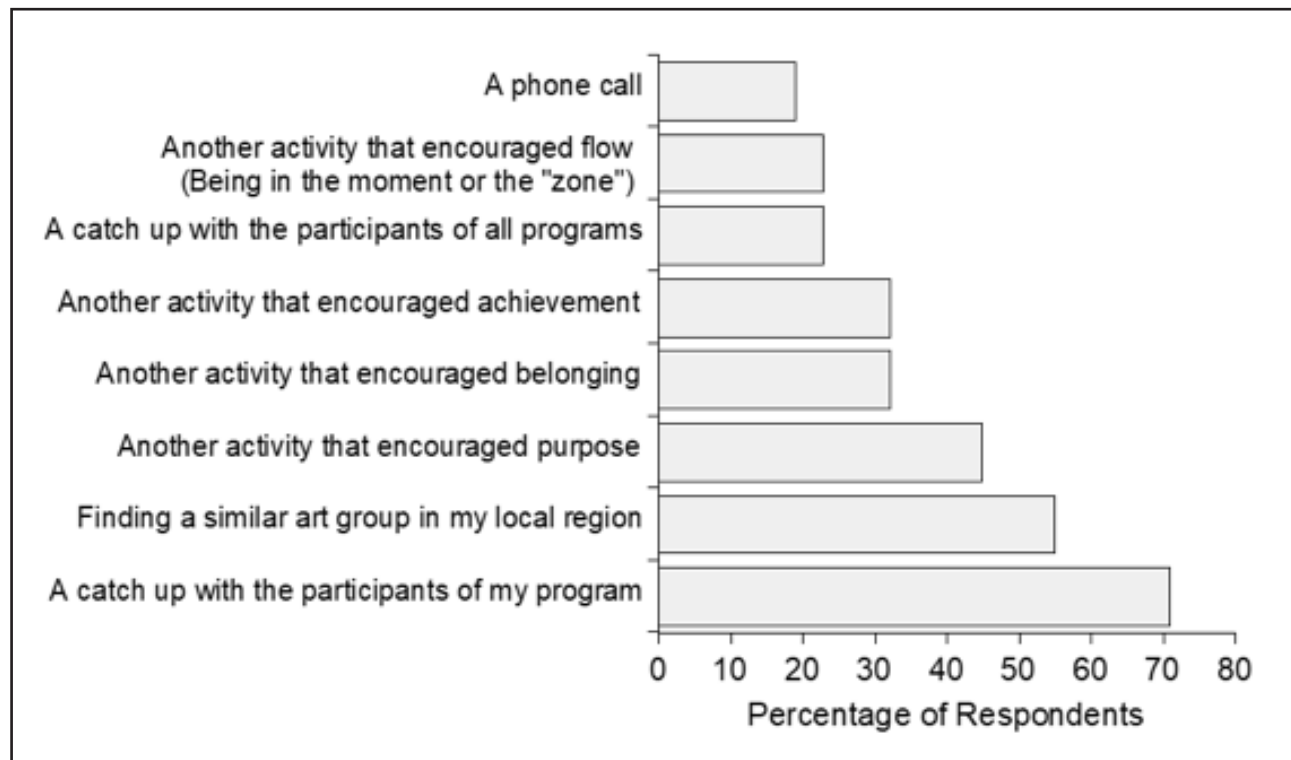


Figure 1: Percentage of respondents who indicated which follow-up activity they would have wished to have available after the ARRTS program was finished

65%, 22% and 13%.¹⁴ Thus, a majority of the respondents (61%) were significantly more likely to be experiencing some degree of continuing psychological distress as compared to 35% in the overall ADF population, $\chi^2(2) = 12.84, p < .002$.

Discussion

The aim of the current study was to examine the self-reported impact of an art-based training program on current serving veterans with respect to six research questions.

Question 1 queried what benefits respondents gained. The respondents reported having experienced multiple benefits, including gains in their sense of behavioural activation, belonging, flow and therapeutic alliance with their arts mentors. On an individual basis, the magnitude of the gains was highly correlated; principal components analysis revealed that the ratings for 16 positive effects all loaded on to a single factor that explained 96% of the variance.

Question 2 sought the duration of the self-reported benefits. A solid majority of respondents (61%) reported that the program's benefits endured at least 24 months, while only 15% reported that the benefits did not outlast the program.

Question 3 asked whether a follow-up would be desirable. The bulk of respondents (81%) reported that they would like to have had an opportunity for a follow-up activity, especially an art activity that involved elements of belonging and behavioural activation.

Question 4 examined each respondent's core self-evaluations and its relation to their experience in the program. Respondents who had a higher CSES score reported more benefits from the program than those who did not.

Question 5 asked about the respondents' general sense wellbeing (K-10) in relation to the perceived benefits of the program. The respondents' current general wellbeing was significantly lower than the general ADF population; 61% were likely to have some degree of disorder in comparison to 35% in the general ADF population. The perceived benefits appear to have been relatively constant across levels of wellbeing or lack thereof.

In this research, respondents reported multiple, enduring benefits from their participation in the ARRTS. Given concerns raised about sustained effectiveness of established therapies,^{37,38} the long duration of change reported by respondents is

strongly encouraging for the participation of military personnel in arts-based programs. Although 61% of the respondents experienced enduring benefits from the arts program in addition to their previous treatment, the respondents' overall wellbeing was lower than the general ADF population. Given the lower level of wellbeing, the respondents' desire for follow-up art activities that promoted belonging and a sense of purpose is consistent with findings that sustaining the retention and maintenance of training is bolstered by brief refresher training.³⁹⁻⁴¹

Limitations and future directions

The current research has framed the ARRTS Program as an arts-based activity adjunct to established forms of psychological therapy administered within the ADF, which is typically cognitive behavioural therapy. Behavioural activation, belonging, flow and therapeutic alliance have been previously suggested as contributors to therapeutic change. The current research confirmed that all four elements were positive outcomes of the arts-based program. What had not been expected was that all four elements appeared to cluster as one factor that contributes to the art-based effect. Yet, the underlying constructs seem to be at least partially distinct. In particular, belonging and therapeutic alliance concern interpersonal relationships, while behavioural activation and flow seem more related to the individual's personal positive experience with an activity. Further research with a greater number of participants to understand the commonality and/or divergence between these constructs would seem worthwhile. Increasing the sample size would potentially allow for the separation of the effects from each of the art-based activities used in the ARRTS Program.

The higher-order construct of core self-evaluations has been proposed as being predictive of future positive engagement and satisfaction.^{27,28} The CSES scores were positively correlated with the benefits experienced by respondents both during and following the program. Further research into how core self-evaluations may mediate and/or moderate this outcome may also be worthwhile. In contrast, there was no discernible correlation of CSES scores with the respondents' reports of their before scores for behavioural activation, belonging, flow and therapeutic alliance. In this connection, the design of the current study involved significant recall from the respondents. The recall of experiences in the ARRTS Program could be considered both semantic and episodic in nature and, given the theorised differences in degradation of such memories,⁴² it would be beneficial to understand how the program

influences the encoding of those memories at the time of experience. An opportunity for further investigation that is less reliant on recall could clarify the present findings, for example, periodic face-to-face mental wellbeing assessments both before and following the program.

Art-based activities fall on a continuum of usage in society ranging self-entertainment through self-development and into their therapeutic usage.⁴³ The framework of established, conventional therapy has been argued by some to be counterproductive for the free forms of expression that art can offer. However, integrated programs such as CBT-ART⁴⁴ are currently being developed. Evaluation of art-based activities' contribution to wellbeing must consider the full range of experiences and delivery methods such activities can provide.

Conclusion

The current study extended the existing knowledge on how to engage military personnel with art as a potential adjunct to their previous and ongoing clinical treatment. Based on the respondents' recall, the ARRTS Program provided aggregate benefits in several ways. The results indicated that the art-based program had a positive effect on apparently disparate elements of the respondents' functioning. In fact, four seemingly unrelated elements of behavioural activation, sense of belonging, flow and therapeutic alliance might be considered one overarching factor, at least in this context.

Acknowledgements

The authors wish to thank the Australian Defence Force, the Australian Government Research Training Program Scholarship and Brigadier Wayne Goodman for their support in conducting the research.

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Authors Biographical Note

Tavis Watt

Mr Tavis Watt has a BSc (Hons), Master of Business Administration, and a Master of Psychology (Clinical). He has held various roles within Human Resources in international oil companies and Director level appointments within the university sector.

He joined the Australian Army Psychology Corps in 1999, in which he is a Major. He has deployed on operations to the Solomon Islands, Timor L'Este, the Middle East and Afghanistan. In addition, he has supported disaster recovery during the 2009 Australian Bushfires. More recently, he has supported the Australian Defence Force—Art for Resilience Recovery and Teamwork Skills (ARRTS) program and the 2018 Invictus Games team.

In civilian life, he is a Clinical Psychologist in private practice, the club psychologist for the AFL team, the Geelong Cats and a PhD candidate at the University of New South Wales (UNSW).

E. James Kehoe

Professor E. James Kehoe has earned a BA (cum laude), MA and PhD in Psychology. He came to Australia in 1977, after completing his PhD at the University of Iowa, to take up a lectureship at the UNSW. He is now Professor and past Director of Organisational Psychology in the School of Psychology. He has served in the Australian Army Psychology Corps since 2008 in the active reserve as a senior project officer, with the rank of Lieutenant Colonel.

Prof. Kehoe has conducted 45 years of research in psychology and published over 100 articles in peer-reviewed scientific journals. He has taught professional and research ethics. He chaired the UNSW Animal Care and Ethics Committee (1995–2000) and continues to be the co-chair of a low-impact ethics panel for human research at UNSW (2001–2017).

Professor Kehoe is a Fellow of the Royal Society of New South Wales, the Association for Psychological Science (USA) and the Psychonomic Society. He is registered and endorsed organisational psychologist and a member of the Australian Psychology Society College of Organisational Psychologists.

Disclosure statement

Tavis Watt is currently a reservist officer in the Australian Army and receives normal wages for his current duties in the ADF ARRTS Program.

Prof. Kehoe receives reimbursement for his travel expenses related to this project from the University of New South Wales

Neither author has any further declarations concerning conflicts of interest associated with the writing of this manuscript.

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