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## **Improvements in mood during Greenwood Music Workshops**

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### **Abstract**

We report a service evaluation of the influence that making simple percussive instruments in natural and urban settings has on mood. Thirty-five out of the forty-eight vulnerable adults aged 18-68 successfully filled out a modified DASS 21 at the beginning and end of a three-day workshop. Six of the participants completed the workshop in an urban setting to offer a direct comparison between that and a natural setting of a woodland, with the phenomenon of biophilia taken into consideration. Due to the personal circumstances of nine participants, another course took place in a semi urban indoor environment. There was a decrease in depression, stress and anxiety across both urban and natural environments. The urban mood ratings improved more than those in the natural setting, but the mood ratings in the natural setting were better overall. Individual feedback given by volunteers about the course is explored in the discussion.

127 words.

### **Acknowledgement**

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## **Introduction**

This is a service evaluation of the workshops offered by Greenwood Music, over the course of three days using green (freshly cut) wood to hand craft simple percussive instruments using basic tools and then play them in a collaborative activity at the end of the workshop. The skills required to participate were nil and people with almost any level of physical and mental ability were able to participate in all of the activities with the appropriate supervision. The courses were designed to take place outdoors and in urban settings to enable comparisons of data. The aim the woodland workshops was to blend the potentially therapeutic benefits of carving wood into instruments with the phenomenon known as biophilia. This term can be loosely described as an innate and genetic affinity with being in a natural environment, there are suggestions that biophilia has a relationship with stress reduction and nature, Westlund (2015). The therapeutic effectiveness of the green woodwork workshops in all settings, was evaluated by surveying participants that attended the courses, measuring the levels of stress, anxiety and depression at the beginning and the end of each course. To measure the mood levels of participants, a simplified version of the Depression, Anxiety and Stress Scale was developed (Lovibond & Lovibond, 1995; DASS-21, see appendix A). These simplifications were intended to make the scale easier for our participants to use, and involved repeating the rating scale anchors alongside each item, instead of asking participants to circle numbers.

The DASS21 is a widely used research tool that measures the negative mood underlying affective disorders. While it is not intended for diagnostic use with individuals, it has been recognised as useful in comparing groups and measuring improvements in a group over time (Ng et al., 2007). Although the scale has three subscales, for each of the nominal

disorders, these correlate highly and a scale total has also been found to be useful (Osman, Wong, Bagge, et al., 2012).

To gain insight on the potential benefits of undertaking the course in an indoor setting, we also observed a course in an indoor environment at Dartmoor Zoological Park, to give a comparison in the change of mood from participants that were indoors versus outdoors. It should be noted that the zoo was also situated in a natural rural landscape, therefore this is not a direct natural versus urban contrast.

## **Method**

### **Participants**

Participants were recruited from local services and community support organisations, and charities, where they were receiving care and or support for a range of multiple and complex mental and or physical needs. Forty-eight vulnerable adults took part in the study workshops, but only 35 provided complete data (6 of which completed the experiment in an urban situation and nine in an indoor environment). The others were unavailable for one or other of the scale completion sessions because of medical appointments. Ten of those who did complete both sessions were male, 18 female, and seven did not indicate their sex. Ages ranged from 18 to 68, with a mean of 44.9 (twelve participants did not provide a date of birth). Some participants attended with their counsellors.

### **Materials**

A version of the DASS 21 was developed (see Appendix A) with a simplified layout to make it easier to understand for the participants to complete. Although the questions were identical to the original (with seven each for Depression, Anxiety and Stress), participants

circled a verbal response for each item (never, sometimes, often, almost always), instead of circling a number. To keep the results relevant to the workshop, the DASS 21 measured how the participant is feeling over the past day rather than the past week.

## **Procedure**

The assessments took place over the course of a three-day workshop. The first DASS 21 was recorded after the briefing at the very beginning of the workshop after the safety instructions for the course itself were given, and participants were approached individually, so that the researchers were available to assist with completing the questionnaires and answering any questions. This initial assessment occurred before any of the activities took place, to get a more accurate rating of how each participant felt without the influence of the workshop. The last assessments were taken individually in the afternoon of the last day of the workshop, whenever convenient to the participants. Any qualitative feedback was recorded (see appendix B). The procedure received ethical approval from the Faculty Ethical Committee, and was conducted in accordance with the guidelines of the British Psychological Society and the American Psychological Association.

## **Results**

### *Mood ratings*

The DASS21 subscale totals were computed as the mean response over the seven items, excluding any missed items (two participants each missed one item on one completion of the scale). Figure 1 displays the means for the 29 who took part outdoors and the six who took part indoors, before and after the workshop.

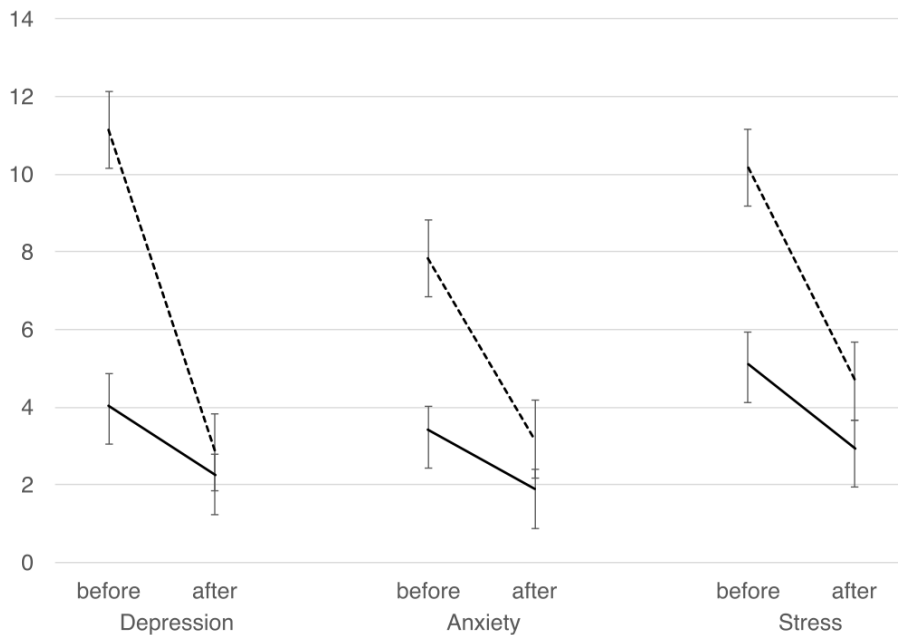


Figure 1: All DASS21 scores decreased over the course of the workshops. As the Indoor group (dashed line) scored higher than the outdoor group (solid line) at the start of the workshop, their scores decreased more. Error bars indicate +/- 1 standard error of the mean.

The three DASS means were entered into a MANOVA with the between participant factor of Location (indoors, outdoors) and the within participant factor of Session (before, after). This showed an overall effect of session  $Mult F(3, 31) = 11.1, p < .001, \eta_p^2 = .52$ , and an interaction with Location  $Mult F(3, 31) = 4.27, p = .012, \eta_p^2 = .29$ , with a marginal effect of Location  $Mult F(3, 31) = 2.77, p = .058, \eta_p^2 = .21$ .

Univariate tests for each scale confirmed the effects of Session for all three scales with scores decreasing over the workshops (Depression :  $F(1,33) = 30.3, p < .001, \eta_p^2 = .48$ ; Anxiety:  $F(1,33) = 18.5, p < .001, \eta_p^2 = .36$ ; Stress :  $F(1,33) = 28.3, p < .001, \eta_p^2 = .46$ ).

There were effects of Location for Depression  $F(1,33) = 7.37, p = .010, \eta_p^2 = .18$  and Anxiety  $F(1,33) = 6.33, p = .017, \eta_p^2 = .16$ , with scores being higher lower overall for the outdoors group, but only a marginal difference in Stress  $F(1,33) = 3.86, p = .058, \eta_p^2 = .11$ .

The interaction of Session x Location was significant for all three scales, with the decrease in scores over the workshops being greater for the indoors group, as they had begun the sessions scoring higher (Interaction Depression:  $F(1,33) = 12.6, p < .001, \eta_p^2 = .28$ ; Anxiety:  $F(1,33) = 4.74, p < .001, \eta_p^2 = .13$ ; Stress:  $F(1,33) = 5.29, p < .001, \eta_p^2 = .14$ ).

Separate independent  $t$  tests for each DASS scale showed that the indoor group began each workshop with higher scores than the outdoor group (Depression  $t(33) = 3.58, p = .001$ ; Anxiety  $t(33) = 3.00, p = .016$ ) but ended the workshops scoring the same (Depression  $t(33) = 0.45, p = .293$ ; Stress  $t(33) = 1.00, p = .327$ ).

The three DASS21 subscales correlated significantly both before and after the sessions, with  $r$  between .70 and .86 (all  $ps < .001$ ). In consequence, we created an overall DASS21 score by summing the three subscales. A repeated measures ANOVA confirmed the effects of Location  $F(1,33) = 6.75, p = .014, \eta_p^2 = .17$ , Session  $F(1,33) = 33.1, p < .001, \eta_p^2 = .51$ , and the interaction  $F(1,33) = 9.70, p = .004, \eta_p^2 = .23$ . Both groups scores declined over time, as would be expected from Figure 1. The indoor group scored higher than the outdoor group before the session  $t(33) = 3.46, p = .002$ , but not after the session  $t(33) = 0.91, p = .372$ .

### *Qualitative evaluation*

After the final DASS-21 was taken in each experiment, participants and their counsellors were given the opportunity to provide their own anonymous feedback, which allowed for a range of insights to be highlighted about the experiment and the course. Concerning the experiment itself, some participants struggled with the wording of the form (see appendix A), saying that they found the survey to be “worded too negatively,” and that questions would have been easier to understand and respond to than the statements provided. One participant, who had suffered brain damage, said that the forms should have been as simple and literal as possible, and a lot of assistance was needed in understanding the questions.



Concerning the course, there was a multitude of positive feedback about working with wood that was easily carved by hand, with some calling it “therapeutic” as it helped them to “forget other things” and liked “making things with a purpose.” Numerous individuals said that they wished to turn wood working into a hobby. For most of the participants, it they had said it was their first time working with wood, but quickly found confidence in using the tools. All participants commented positively on the quality of instruction.

The quality of instruction seemed to play a big part in the feedback, with many participants commenting on how much it enhanced the workshop. One guardian/counsellor for an outdoors group who were part of a drug abuse rehabilitation course said that to his surprise the participants gave no resistance doing as they were asked, that there was no issue of authority and that it allowed the participants to relax more. The counsellor went on to say that he made a breakthrough with a participant during the course who had said that the tasks and the outdoor setting was relaxing enough for her to feel comfortable in talking to him. The counsellor said that what took an afternoon usually took him weeks in terms of gaining trust and openness.

For the participants that were outside, there was a lot of positive feedback given for the location of the course, with many commenting on the beauty and peace of a natural setting. One of the outdoor groups already spent a lot of time gardening outdoors as a part of the “Grow 4 good” scheme at Dartmoor Zoological park, and a particular comment from that group was that “it feels like you’re using your brain, being creative, thinking. It feels better than normal work outside.” This insight could suggest that there is a positive relationship between being outdoors and the quality of mental and physical stimulation. It was clear that all the participants whether or not they completed to the survey or the full duration of the course, enjoyed it and generally found it relaxing

## Discussion

There was a marked improvement in stress, anxiety and depression levels for both the indoors and outdoors groups. Although there was a larger improvement for the inside group, both the inside and outside groups had their mood improved to a similar rating (see figure 1), with the outdoors participants beginning the sessions at a lower level overall of stress, anxiety and depression.

The data from each of the participants will have been influenced by their individual needs: participants with learning difficulties may have not fully understood what was being asked in the surveys. Some participants in the groups were at various stages of drug abuse rehabilitation and or dealing with mental issues, so their mental wellbeing will have also been strongly affected by this in ways that would have been impractical and invasive to measure, as well as making some participants unable to complete the experiment.

Overall, there seems to have been an overwhelmingly positive reaction from participants, both statistically and qualitatively, showing that not only is completing the workshop an effective method of reducing depression, anxiety and stress, but completing the workshop in a natural outdoors setting improves the mood of participants from the outset, facilitating co-operation and enhancing outcomes.

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## Appendix A: Simplified DASS21

Please read each statement and circle the answer which indicates how much the statement has applied to you today.

There are no right or wrong answers. Do not spend too much time on any statement.

I found it hard to wind down	never	sometimes	often	almost always
I was aware of dryness of my mouth	never	sometimes	often	almost always
I couldn't seem to experience any positive feeling at all	never	sometimes	often	almost always
I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	never	sometimes	often	almost always
I found it difficult to work up the initiative to do things	never	sometimes	often	almost always
I tended to over-react to situations	never	sometimes	often	almost always
I experienced trembling (eg, in the hands)	never	sometimes	often	almost always
I felt that I was using a lot of nervous energy	never	sometimes	often	almost always
I was worried about situations in which I might panic and make a fool of myself	never	sometimes	often	almost always
I felt that I had nothing to look forward to	never	sometimes	often	almost always
I found myself getting agitated	never	sometimes	often	almost always
I found it difficult to relax	never	sometimes	often	almost always
I felt down-hearted and blue	never	sometimes	often	almost always
I was intolerant of anything that kept me from getting on with what I was doing	never	sometimes	often	almost always
I felt I was close to panic	never	sometimes	often	almost always
I was unable to become enthusiastic about anything	never	sometimes	often	almost always
I felt I wasn't worth much as a person	never	sometimes	often	almost always
I felt that I was rather touchy	never	sometimes	often	almost always
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)	never	sometimes	often	almost always
I felt scared without any good reason	never	sometimes	often	almost always
I felt that life was meaningless	never	sometimes	often	almost always

## Appendix B Feedback from participants

### **Longreach, (2016)**

“It was a lovely couple of days.

The women were able to keep their autonomy: They weren't being given strict rules, they were allowed to express themselves, there were no imposed barriers. In the community, there's strict rules and schedules, but here they could flourish and develop, and they didn't resist the tuition.

Afterwards, during a group meeting, there was lots of laughter and the effect on their wellbeing was obvious.

As a practitioner, I noticed a woman who hadn't really spoken to me was able to talk and open up; the calm environment allowed me to easily get to know her and begin building a relationship. As there was no strict framework, no obstacles of time or labelling, the talk felt natural, organic. She opened up to me in a way that she may have not done for some time otherwise, or even at all.

It allows a councillor to be more creative, but I didn't even notice until afterwards that we had made real progress. I attribute that to being in the forest and the wrk we were doing.

All sense of formality and authority was gone. Some girls said that the barriers between councillor and the women broke down; you were able to let your guard down and connect on a very human level.

I think what's more important is that, on this course, it was less about advancing, learning, developing skills, it wasn't about what they made or brought home, and more about the time spent. The things they made served more as a symbol of what a good time they'd had, than an achievement”

### **Burrator (2016)**

“ I felt very relaxed making musical instruments, At first I was nervous but with Phil's help I got through it and made two instruments”

“ I found creating a fundamental object from raw materials rewarding. I enjoyed having some freedom to make instruments to my own specification, while still working within guided parameters. Making in this way feels more like personal expression, eliminating agitation from my labour”

“Great session, for the first time in ages I forget about ‘other things’ and enjoyed the moment. Found confidence using the drawknife, I didn't once look at the time”

“Today has been fun, Learnt how to make instruments which I have not done before would do it again”

“A fantastic day creating instruments using green woodworking , greatly improving my use of a shave horse and drawknife, surprisingly relaxing when using the shave horse”

“Really fun session and sense of achievement. Great make something and take it home very therapeutic using the shave horse. Relaxing to do it at a beautiful location too”

It was great to indulge in the experience rather than watching /managing others”

“Thoroughly enjoyed the experience and the day, first time working with any kind of wood”

### **Rap by Christine at Hamoaze (2016)**

working with good will make you feel good

its a craft of old not often told

So if you get a chance, enjoy the romance

I'm feeling the weight, just the texture is great

you to nature it brings

will make your heart sing

so don't say no, just give it a go

cause you won't feel bad

but ever so glad.

### **Grow For Good (2016)**

"At the beginning I wasn't sure, but I've loved it! We started out without much confidence with the tools that we haven't used before, but it's been surprisingly easy and really fun."

"It doesn't matter if I don't finish anything. It's about the journey, not the arrival."

"There's something really special about carving a block of wood and slowly turning it into something"

"I love the drawknives, I think there brilliant"

" if this was the only thing I made all day I would be happy”