Fulbourn Hospital Report: Effects of CardioWall® on Mood Management in Patients with Mental Health Conditions

October 2020

Introduction

The purpose of this study was to ascertain the possible effects of exercise on managing immediate mood in patients with mental health conditions. Specifically, how using the CardioWall® aids mood management.

CardioWall had been purchased with the expectation that the competition element would provide motivation for patients to exercise, give them a sense of achievement and thus, improve their morale. Additionally, it would solve the problem of needing patients to get exercise without having to be let out of the secure unit alone, or accompanied to the gym.

When participating in any type of therapy, patients at Fulbourn are asked to judge the type of emotion they're dealing with, and the intensity of this emotion. This helps practitioners understand a patient's state of mind, and how different therapies can impact this.

This study involved the self-reporting of mood by patients, and observation by practitioners. Participants in this study were asked to report on their mood and emotions before and after using the CardioWall. 'CardioWall use' was determined as a minimum of 1-minute / full round of exercise. E.g. 1-minute of the game ClearOut. Clinical staff also assessed the use of the CardioWall via observation and conversations with patients, and reported on the impact it has had on patients and staff.

The study was carried out by Fulbourn Hospital between April – June 2020 for patients admitted to Mulberry 1 unit. Mulberry 1 is primarily an assessment unit, where patients normally stay for 3-7 days, then are transferred to other units (though the Covid-19 pandemic disruption has minimised moves between the Mulberry units this summer, making Mulberry 1 both a treatment ward and a recovery ward, in addition its original assessment role).

HQ
Unit 1, Callywith Court,
Callywith Gate Ind Est.,
Bodmin, UK PL31 2RQ

Sales
Future Space,
UWE North Gate, Filton Road
Bristol, UK BS34 8RB

Contact
+44 (0) 1726 981 123
www.rugged-interactive.co.uk
hello@rugged-interactive.co.uk

Company No.
Registered In
England UK
No. 7114134

Method

Participants:

14 participants were included as part of the overall analysis. 37 independent self-reports were taken from 14 different patients to assess their mood and emotional level of distress.

The participants were a mix of female and male patients, and on average, spent 7 days at Fulbourn Hospital in Mulberry 1.

Before using the CardioWall, patients were screened to check that it was an appropriate form of exercise for them, and that they were fit to exercise.

Self-report Questionnaire:

Participants used a questionnaire to report their current mood and emotional disturbance before and after CardioWall use. Measures were reported using a 10-point scale.

Question 1: Emotion currently felt (mood/affect scale)

How do you currently feel on this scale? Where, *0 = depressed or no feelings, and 10 = too many, pressured or manic feelings*

0 1 2 3 4 5 6 7 8 9 10

Question 2: Emotional level of disturbance / Subjective Unit of Distress (SUD)

Rate your level of disturbance from 0-10. Where, *0 = no disturbance or neutral, and 10 = the most disturbed you've been*

How intense are your feelings?

0 1 2 3 4 5 6 7 8 9 10

Note: SUDs rating scale is a used to measure the intensity of distress or nervousness in a patient. This scale helps psychologists understand a patient's current level of distress, so that with an added interaction, they can try to lower a patient's SUDs.

Results

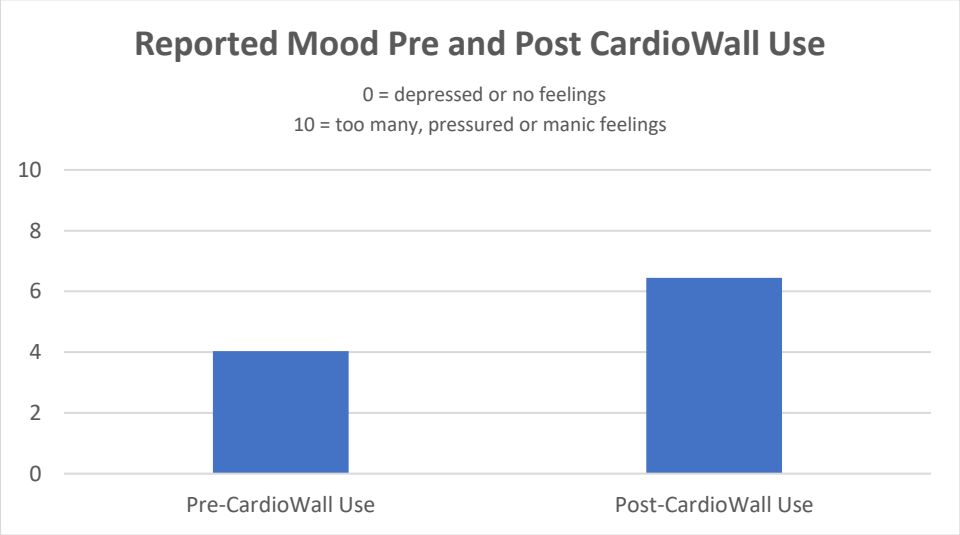
Change in Mood

Mood can be explained as a short-term emotion, whereas *affect* is a more persistent mood and explains the underlying feeling or state that a person is feeling (often a sustained emotion). This study looked particularly at changes in mood over the course of a CardioWall session.

Using this 0-10 scale, practitioners would ideally like to see patients reporting in the middle section of the scale. Inferring that the individual is balanced in their daily emotional experience.

If participants reported a score of 0 or 10 at the start, they were removed from the analysis as they were classified as anomalies.

- Average score felt before CardioWall use: **4.03**
- Average score after CardioWall use: **6.45**
- Average change in emotion score**: 2.42**



Overall, the CardioWall appears to have a positive effect on mood of patients.

For practitioners, an 'improvement' would be comparing where someone starts on the scale, then where do they go after an 'input' (in this case the CardioWall). Practitioners hope

that an input has an uplifting effect on their mood. Any change reported in mood is likely to be good. Practitioners would then hope to see a sustained change. In this case, that the person enjoyed themselves, or felt in a better emotional state after using the CardioWall that they would choose to use the CardioWall again.

Of the 14 participants that used the CardioWall during this study, 12 chose to use the CardioWall again, showing that using the CardioWall had an uplifting effect on the mood of 86% of patients.

Level of Disturbance:

When reporting level of disturbance, a score that is as low as possible (or as close to 0 as possible) is desired. It is worth noting that for some patients, a score of 0 would be near impossible if they have had severe emotional distress in their past.

- Average disturbance before CardioWall use: **6.06**
- Average disturbance after CardioWall use: **6.82**
- Average change in disturbance score: **0.74**

Our results show a slight increase in reported disturbance score following CardioWall use. Practitioners have explained this in the following way:

We suspect that patients may have incorrectly interpreted the scale when reporting their level of disturbance alongside their emotional state, as we would not expect their level of disturbance to increase. For example, a patient who reported feeling in a better mood following CardioWall use (their emotional state), may have noted their disturbance level as having increased. Whereas, we expect that what they intended to report is that they are feeling better, more intensely.

The reason we are confident in this interpretation is that we have not had a single patient say that they feel worse (more distressed) after using the CardioWall. Every patient has enjoyed using it, so these scores appear to be incorrectly self-reported.

Practitioner Feedback

Specific Patient Case

An example of a patient that particularly benefitted from using the CardioWall was a middle-aged female. She was on the ward for a few weeks and had an actively negative view of herself, especially her physical appearance. Efforts to influence this became excessive. Exercise helped her feel like she was in control of her weight and ultimately her life. The CardioWall was a positive focus for her when she was at Fulbourn and it became a key part of her care plan.

She could use the CardioWall freely, meaning she managed the exercise regime herself. The competitive element was particularly beneficial as she could see herself improving and beating other people's scores. As her CardioWall scores improved, it helped improve her sense of self-worth.

Physical and Mental Benefits

The CardioWall is used at Fulbourn for assessment, treatment, recovery and for general exercise on the ward. Overall, practitioners at Fulbourn Hospital reported that use of the CardioWall increased the patient's sense of wellbeing and improved their mood.

Staff at Fulbourn have found that the competitive element is very positive for patients. Many compete against their own scores, and they have found this particularly useful for motivating patients to be active, and to spend time focussing on a specific task.

CardioWall Use in a Hospital Setting

The CardioWall is non-threatening, and it does not have the same stigma as a gym environment, or many other gym equipment products. To use the CardioWall, you do not require a trainer, and patients can use it in their own time. Furthermore, it does not require the time of a physio, and it helps personalise each person's experience on the ward. One key benefit that staff also reported is that the CardioWall helps get and keep people active without having to let them leave the ward.

For staff, it facilitates patient-practitioner relationships, as they're spending time with the patient talking about something they have achieved (i.e. a new high score). For many patients, a staff member taking the time to talk to them can have a very beneficial effect on

their current mood. Over time, meaningful activity such as this can provide emotional, creative and intellectual stimulation, and subsequently, could contribute to improvements in a patient's affect (persistent mood).

Limitations

Patients are usually on the ward for short periods of time, which was why we chose to carry out an immediate CardioWall impact study. This has however, had some limitations. In an ideal world, we would track participants over the course of their stay and following discharge, to analyse any changes in emotion and mood in the long term.

Additionally, data collected was subjective which has a certain level for error. For example, some patients reported a mood score of 0. However, practitioners would not expect someone reporting a score of 0 to be able to attend the session, which is why these outliers were removed from analysis.

Conclusion

Fulbourn Hospital initially decided to purchase the CardioWall due to the NHS England's *NHS Standards* released at the time regarding the improvement of the *health and wellbeing of staff and patients.* This is one of the NHS CQUIN's (Commissioning for Quality and Innovation) which all units should aim for, and is a framework that supports the improvement in quality of services and care. The staff here have reported a multitude of benefits for patients physical and mental health, and the improvement of patient-staff interaction.

Overall, Fulbourn Hospital have found that the CardioWall positively supports patient's wellbeing and physical health. This was reflected in the self-reporting by patients of their emotional state during the study. It has also been very beneficial for use as a mindful activity, as it helps patients keep their focus and block out distraction.

Richard Hanlon, a Clinical Nurse Specialist at Fulbourn said, "it's something we are very pleased we purchased, and would recommend to other mental health sites looking for innovative ways of keeping patients healthy, happy and engaged whilst on the ward".