Grampian Hospitals Art Trust (GHAT) Artroom Evaluation Report

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Abbreviations and terms used in the report

Abbreviations

CMO	Context + Mechanism = Outcome
CMOC	Context + Mechanism = Outcome Conjectures
CMO & CMOCs	Both terms are used interchangeably
SRE and RE	Scientific Realistic Evaluation and Realistic Evaluation
GHAT	Grampian Hospitals Art Trust
NHS	National Health Service

Terms used in this report

Artroom raw programme theories:

Artroom related theories developed from the Artroom related documents including unpublished and publicised literature about participatory arts. The developed Artroom raw programme theories are presented in annex 13. Artroom raw programme theories are Artroom related propositions representing how participatory arts are being delivered.

Artroom initial CMO theories or CMO hypotheses:

The transformation of the Artroom raw programme theories to Artroom initial CMO theories for testing and refinement in the next phase of research. These are presented in table 5 and results section 8 as Artroom initial CMO theories

Artroom refined CMO theories:

Refined CMO theories were developed through the testing and refinement process using in-depth interviews and survey data information. They are presented in the results section 8 as "Artroom refined CMO theories" (see tables 7, 9,10 and 11).

Patients and service users:

The terms have been used interchangeably in this report.

Arts/Participatory art

The term used in this study refers to all kinds of mixed art and participatory art activities including painting, drawing, sculpture, music, poetry, photography and so on.

Middle Range Theories

A middle range theory is understood as "theory that lies between the minor but necessary working hypotheses" (Pawson and Tilley 1997)

How to read refined CMOs (Context Mechanism Outcome) in the results section

Each CMO comprises three components: context; mechanism; outcome. A context may have a number of mechanisms and a mechanism may have a number of outcomes. Every context is linked to its correspondent mechanisms and every mechanism is linked to its corresponding outcomes. The CMOs are numbered; for example if a context has four mechanisms and linked outcomes they are numbered as CMO 1 to 4. In all thematic topics, analysis and commentary refer to the numbered CMOs so that readers can identify the particular CMO configuration in the relevant table while reading the commentary. At the end of each thematic topic, brief reflections are provided in the form of what works, for whom, how and in what circumstances?

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EXECUTIVE SUMMARY

Summary

Artroom was developed by Grampian Hospitals Art Trust (GHAT). It is an art-based social inclusion activity, aimed at improving the wellbeing of patients. Currently available in three hospitals and a palliative care site in NHS Grampian, it involves visual artists and/or a writer working with patients, sometimes along with their families and clinical staff, in a studio environment. This allows the participants to engage with a range of art forms. It offers new and potentially inspiring challenges and positive effects on the health and well-being of patients, and staff.

The aim of this study was to learn how Artroom interventions benefit patients and staff and thus contribute to the further development of the programme.

Scientific realistic evaluation (SRE) was used to develop Artroom context-mechanism-outcome (CMO) theories. The study involved in-depth interviews and a survey of users and staff, which resulted in the development of a refined set of CMO theories.

Artroom was shown to be effective in improving patient confidence, control, sense of purpose and of achievement. It improved relationships between patients and clinical staff, while providing time and respite for staff and enhancing the hospital environment and trust of family members. Of particular value is its role in concentrating on holistic, person-centred approaches, rather than focussing on illness.

Background and Context

There is a growing body of evidence on the beneficial effects on well-being, even health, of patients being exposed to art and arts-related activities. Grampian Hospitals Art Trust first became involved in such activities in 2006 with a pilot study at Roxburghe House. This led to the development of Artroom, an arts-based social inclusion activity in which visual artists and/or a writer work with patients, relatives and clinical staff in a studio-like environment. The full programme, running now for eight years, is currently available on five sites over three hospitals and a palliative care hospice.

GHAT's executive and board members sought an evaluation of the Artroom programme to contribute to its further development. This study concentrated on the views of users of the service and centered on four areas of interest: patient and visitor related outcomes, staff and hospital related outcomes, organisational related outcomes and supporting and hindering factors.

Methodology

Scientific realistic evaluation (SRE) provides a robust framework for evaluating the complex nature of how the arts impact on health and well-being through the Context+Mechanism=Outcome (CMO) formula. SRE recognises that nothing works everywhere for everyone; rather it helps determine "what works for whom and in what circumstances". Policy makers, managers and practitioners can therefore better understand how and why programmes work or don't work in different contexts. Within the overall SRE framework, mixed

methods data collection was used to conduct the study in two phases. Firstly, selection and analysis of existing Artroom documentation was carried out to develop a raw programme theory and transform that to an initial CMO theory. In the second phase, mixed-methods data collection allowed testing and refining of the CMO theories. In depth interviews with, and a survey of, service users, clinical and GHAT staff and Artroom practitioners tested the theories and provided for their final refinement and configuration.

Interviews were transcribed verbatim for analysis by NVivo 10. The survey data were analysed by calculating means and averages for the main Artroom themes, before they were mixed and merged to produce the Artroom refined CMO theories,

Results

The evaluation focussed on four broad themes and a number of expected outcomes, which were extrapolated from a literature review: patient and visitor (family) related outcomes; staff and hospital related outcomes; organisation related outcomes; supporting and hindering factors.

The evaluation has show effectiveness in improving staff and patient confidence, control, sense of purpose and sense of achievement. Furthermore, Artroom interventions have improved relationships between clinical staff and patients, provided respite and quality time for staff and improved trust between family members and the overall hospital environment. Even in the palliative care setting, patients and staff believed Artroom had contributed towards quality of life by engaging terminally ill patients in a positive environment.

Discussion

This was small scale in terms of the number of in-depth interviews and survey participants. The evidence around participatory arts in healthcare generally also lack robustness. A measured approach is therefore required in generalising the results. On other hand, the strength of the mixed methods approach and strong methodological framework of SRE support show positive outcomes for the programme and should improve the confidence that GHAT and donor organisations have in it.

Recommendations

- A model of Artroom delivery should be clearly defined; it might not be applicable in all situations, but it could offer corporate benefits to promote the Artroom and attract wider stakeholders.
- GHAT should have a clear communication strategy to raise awareness of Artroom (GHAT should, in particular, engage more actively with senior/mid level clinicians and managers to promote the effectiveness of Artroom).
- Artroom programme should expand to over more hospitals and increase number of hours per week
- Further research is needed on Artroom, especially to define and measure the value of positive patient outcomes, e.g. staff costs dealing with distressed/agitated patients, staff stress, breakdown in patient-staff-family member relationships etc

1.0 Introduction

This report presents the findings from an outcome effectiveness evaluation to measure the performance and impact of the Artroom intervention (Smith & Ory 2014; Kozica el 2015). The purpose of the evaluation was "to learn transferable lessons which could contribute to further planning and development of the Artroom programme in the current and other relevant settings". The evaluation aims to inform decision makers and practitioners about how the programme is working and whether the programme has started making an impact.

The study applied Scientific Realistic Evaluation (SRE) (Pawson and Tilley 1997) framework as an overall methodology to evaluate the programme. The report explains how the SRE framework is applied, ethical approval, data collection, and data analysis techniques, and how the Artroom programme theory was developed and transformed to the initial Context+ Mechanism = Outcomes Conjectures (CMOCs) and presented in testable CMO propositions. The results section provides detailed discussion about refined and updated CMOCs in four main areas of interest: patient and visitor related outcomes; staff and hospital related outcomes; organisation related outcomes; supporting and hindering factors. The final discussion centres on the main themes of the study including strengths and limitations of the methodology and the main areas of outcome. The recommendations and conclusions of the study are presented at the end of the report.

2.0 Background and context

Grampian Hospital Arts Trust (GHAT) has been at the forefront of the development and implementation of Artroom projects within hospital settings, in partnership with NHS Grampian. Artroom is an art based social inclusion activity with the overall aim of improving the health and wellbeing of patients and staff. The first Artroom pilot was developed at the day unit at Roxburghe House in 2006 and in 2007 a six month pilot was introduced at Woodend Hospital and Ugie Hospital in Peterhead. Since then, a number of Artroom pilot interventions have been rolled out at various hospital locations in Grampian and the projects now encompass five creative programmes developed in three hospital sites and one palliative care site.

There are perceived health and wellbeing benefits for patients and staff from Artroom as seen through patient and practitioners' feedback evidence (Lawson et al 2006; Daykin & Byrne 2006; Morris et al 2015). Artroom enhances wellbeing by providing opportunities for participants to engage with a range of art forms, offering them new and inspiring challenges. Visual artists and/or a writer work with patients, their families and staff in a studio-style environment, where patients are invited to attend the arts sessions, working at their own pace on projects of their choosing. The sessions are completely person centred, facilitated by professional creative practitioners. The project is not linked to clinical care plans, but has a therapeutic and rehabilitative benefit for people as it builds independence and restores self-confidence in a way that complements medical treatment. People experiencing the most difficult of times are enabled to take charge, make their own decisions, surprise themselves and discover something new against a continual flow of medical routines. This becomes a positive experience of the hospital environment. Artworks created by patients and families are framed and displayed across each department. The project has demonstrated health and wellbeing and mental health benefits to patients, visitors, family, relatives and staff.

2.1. Artroom delivery plan/model

Artroom delivery is not fixed; a flexible approach is used depending on the situation on the particular day. The main steps involved in delivering an Artroom session are:

- The Artroom artist agrees dates with NHS staff and management in advance.
- On the agreed date and time, the Artroom artist or Volunteer artist comes to the department and goes around the wards to informally ask patients, staff, and visitors if they wish to join Artroom participatory art activities at the hospital.
- The artist displays a range of participatory art activity materials such as water colours, pencil colours, drawing papers. Music is also organised to enhance the creative atmosphere.
- Artists engage patients in informal conversation and the creative journey begins.

Participants take time to engage and work at their own pace. The sessions usually run for around 2 hours. See table 12 for an applied model of Artroom described by GHAT artists.

2.2. Main hospitals covered and the resources deployed

Table 1 shows the Artroom venues and resources deployed during 2017. The Artroom staff, time and funding varied throughout the intervention area, depending on the availability of the funding and donors. The weekly average number of participants in Artroom varies significantly from 3 to 12 participants per session, as numbers are affected by admissions and discharges

Table 1: GHAT Artroom current resources deployed

Name of the Hospital	Artroom activity hours committed (weekly)	Artists/Volunteers	Participants
Woodend Hospital Aberdeen	8 (four sessions in 4 different wards)	1 Senior Artist, 1 Artist	Numbers vary depending on a variable patient numbers.
Royal Cornhill Hospital Aberdeen	4 (two sessions in two wards)	1 Senior Artist, 1 Artist	Numbers steady and average at 6-10 per session
Royal Aberdeen Children's Hospital	4 (two sessions split across two days)	1 Senior Artist, 1 Artist	Numbers very high, especially in school holidays 10 – 25 per session
Roxburghe House Aberdeen	18.75 (split over 3 days) Visual Artists Writer 24hrs over three days	1 Senior Artist, 1 Artist, 1 Senior Writer, 1 Writer	Numbers vary depending on patient numbers. This is more qualitative work

2.2.1 Main funding support sources

A variety of trusts, foundations, NHSG endowments, Friends of Roxburgh House, GHAT revenue from fundraising events and donations contribute towards funding the Artroom delivery.

3.0 Purpose, aims and objectives of the evaluation

3.1 Purpose

To learn transferable lessons about how Artroom interventions benefit patients, staff and NHS Grampian. This could contribute to further planning and development of the programme.

3.2 Research question

How do Artroom interventions benefit patients, staff and NHS Grampian in hospital settings?

3.3 Specific aims, objectives and outcomes

a. Overall aims

To evaluate the Artroom project using a 'pluralistic' scientific research approach by applying Scientific Realistic Evaluation (SRE) framework

b. Objectives

- To conduct a literature review to explore and develop participatory arts related raw Artroom theories.
- To develop Artroom initial theories using Context + Mechanism = Outcome (CMO) formula and refined CMO theories by outlining what works for whom, how and in what circumstances.
- To conduct 6 in-depth interviews and a survey with the service users, Artroom practitioners and hospital staff.

c. What outcomes will be assessed and evaluated

- To describe the model of Artroom delivery.
- To explore whether "Artroom" activities are welcomed and appreciated by patients.
- To assess patient and staff experiences of hospital-based environment and clinical services in the context of Artroom activities.
- To explore and explain how Artroom activities engage patients, visitors and staff.
- To assess how Artroom projects in hospitals enhance patients' quality of life and which mechanism and approaches underpin the whole process, i.e. better outcomes in terms of physical, social and mental wellbeing.
- To identify barriers or enablers to implementing Artroom in the hospital setting.
- To assess gains to clinical outcomes, if any, from patient satisfaction and inclusion.

4.0 Methodology

4.1 Evaluation approach

The Artroom service has been delivered in NHS Grampian hospitals for 8 years. GHAT board members were interested in an evaluation which could contribute towards further planning and development of the programme. No formal outcome evaluation had been conducted, but small scale reviews and assessments of various Artroom projects in contributed towards the programme theory development process in this report.

The aim of this evaluation was to develop a scientific understanding and measure the outcome effectiveness of Artroom delivery. This evaluation considered all three main forms of evaluation, impact, formative and outcome effectiveness evaluations. Generally, impact evaluation is carried out to judge the extent to which a programme has achieved its overall aims and objectives and is usually conducted after the programme has ended (Smith & Ory 2014; Kozica el 2015). A formative or process evaluation is carried out to inform the ongoing intervention (Smith & Ory 2014;Kozica el 2015). The outcome effectiveness evaluation is carried out to judge the extent to which a programme has achieved its initial aims and objectives and is usually conducted towards the end or while the programme is still being implemented (Smith & Ory 2014; Kozica el 2015). Here it was most appropriate to carry out an outcome effectiveness evaluation, as Artroom is still being implemented and GHAT believed that the goal of the programme was still to be achieved. This type of evaluation could provide a structured understanding of how the programme was performing, how the observed outcomes were achieved and how the practices could be improved to achieve better outcomes in the future.

4.2 The outcomes to be evaluated to assess Artroom

The evaluation process focused on 4 broader themes and a series of expected outcomes which were extrapolated from the literature review as mini-hypotheses and Artroom theories. The 4 main areas of interest were:

1) patient and visitor related outcomes

2) staff and hospital related outcomes

3) organisation related outcomes

4) supporting and hindering factors.

The original Artroom programme outcomes were also considered while developing Artroom raw programme theories and hypotheses (see detail in annex 13).

4.3 Methodological approach

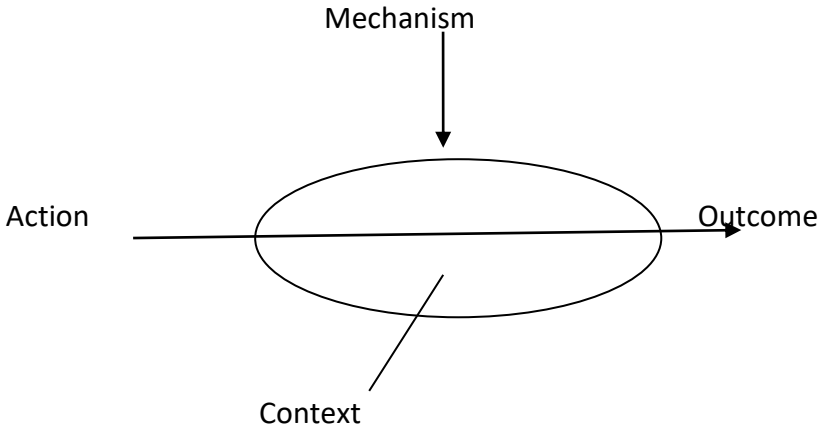
In this section, a brief description of the 'realist' philosophy of science is provided before discussion about the SRE framework and its application to the study

4.3.1 Scientific Realistic Evaluation: roots with 'realist' philosophy

The roots of Scientific Realistic Evaluation can be traced back to the realist tradition in the philosophy of science (Bhaskar 1978 & 2008). Scientific realism and realistic evaluation have many commonalities and are mainly concerned with the reality of social happenings considering

context and mechanism of events in pursuit of outcome, as shown in Figure 1 below. To develop knowledge and understanding about the mechanism through which an action causes an outcome and about which context provides the ideal conditions to trigger the mechanism, the consideration of context and mechanism is fundamentally important. (Pawson and Tilley, 1997; Elster, 1989, Robson, 2002).

Figure 1: Representation of Scientific Realistic Explanation



Scientific Realism is directly linked to Roy Bhaskar's Critical Realism. Bhaskar accepts the existence of the thing in itself and says it is knowable, but nonetheless asserts that there are "structures" and "mechanisms" which exist beyond empirical reality and which are difficult to know (Bhaskar, 1975). Critical Realism proposes that the world is structured in terms of three overlapping and complex, but distinctive domains:

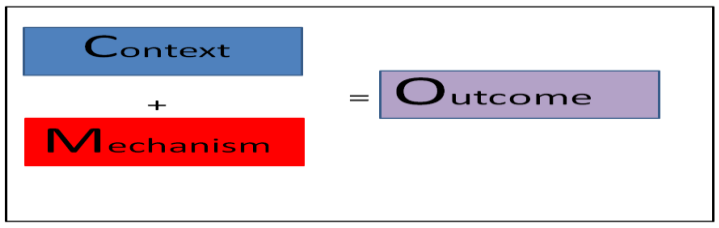
1. The real world: generative mechanisms; tendencies; powers.
2. The actual: happenings of the events.
3. The empirical: experience and practices.

Pawson and Tilley (1997) developed a realistic evaluation framework for evaluating programmes based on a critical realist perspective, a philosophy that draws on a mixed-methods approach. There are many schools of realism and most have similarities (Elster, 1989, Robson, 2002). As an overall understanding, critical realism is concerned with the social world as the starting point for analysis. The key feature of critical realism is its emphasis on the mechanics of explanation (Bhaskar 1975 & 2008). A critical realist standpoint contends that all programmes involve interplay between individual and institution, between social structures and human agency, of micro and macro social processes and that all programmes also involve disagreement and power play (Bhaskar 1975& 2008). For critical realists, it is not sufficient to simply explain the existence of social phenomena. It is also important to understand the rationale underlying the existence of these phenomena (Bhaskar 1975 & 2008, TBCS, 2012). Scientific realism and realistic evaluation can provide a robust model of scientific explanation which avoids both positivism and relativism (Robinson, 2002).

4.3.2 Overall methodology

SRE was applied as an overall framework in this study. It is considered a robust approach as it takes into consideration individual responses, efficacy and contexts as the main building blocks in order to evaluate a social programme and answer the question of 'what works, how, for whom, in what circumstances?' (Pawson and Tilley, 1997). The evaluation framework is based on the formula: Context + Mechanism = Outcome (CMO Figure 2) which is described below in more detail.

Figure 2: The components of RE known as CMO



a. Context

Context is a specific environment in which everything is happening; it refers to those conditions in which the programme is introduced that are relevant to the programme mechanisms. A realist utilises the contextual thinking to address the issues of "for whom" and "in what circumstances" a programme will work. Context examples could be the hospital social norms, cultures, ethics, policies, local values, geographies, interactions between staff, patients, visitors, Artroom artists and so on. People's attitudes and behaviours can also be considered as context. In terms of the Artroom project, a potential context could be the local community/staff culture, a map of the norms of the Artroom programme, the politics involved, the local policy for supporting art related activities and its system of applications, the national policy and guiding principles.

b. Mechanisms

Mechanism is a potential mapping and pathway of an outcome. It refers to people's choices, decisions and capacities, describing how people react when faced with an intervention; they are the pivot around which SRE revolves. Identifying mechanisms involves developing propositions about what it is within the programme that triggers a reaction from its subjects. Art-related interventions in health care settings only work through the action of mechanisms, through a process of weaving resources and reasoning together. Potential resources are pooled, generated and synergised through collaborations to achieve better outcomes for patients. Pawson and Tilley (1997) argue that, without this being the first item on the research agenda, all subsequent work on programme outcomes will remain an enigma. Examples of mechanism within Artroom programme implementation could be the partnerships and multi-agency collaborations, role of NHS staff and Artroom artist and volunteers and the attitude of users/patients and partners. These potential mechanisms could lead to some outcomes and many factors within these mechanisms could trigger other factors to achieve outcomes.

c. Outcome patterns

Outcomes in SRE language are the intended and unintended consequences of programmes, resulting from the activation of different mechanisms in different contexts. For example increase

in turnover, decrease in numbers, good or bad. To build an outcome pattern requires understanding and explanation of a number of variations: implementation variations; impact and process variations; socio-economic sub-group variations; temporal outcome variations; personal outcome variations; regional outcome variations; biological make-up variations. The outcome patterns from the Artroom perspective could be improved relationship of the artists with patients and visitors, increased positive engagement in arts and Artroom activities, improved physical and mental wellbeing, improved confidence, enhanced self efficacy, empowerment and reduced social isolation.

The CMO framework has particular strengths in assessing and understanding social interventions, as in the case of social and healthcare programmes (Wand et al. , 2009; Marchal et al. , 2012). Programmes such as Artroom are concerned with effecting change in the form of an outcome which is deemed, for some reason, to be 'a problem' for example isolation among patients and threatening hospitals' clinical environment. The healthcare programme aims to modify and alter the patterns of the targeted problem with positive change. There may be a number of reasons/causes for the problem, however the aim of the programme is to identify and reform these outcomes. Thus, where science is concerned with understanding outcomes, programme evaluations are concerned with understanding how outcomes are reformed and changed to achieve better and positive outcomes (Pawson and Tilley, 1997).

4.4 Application of SRE to the study

From an SRE perspective, in any evaluation study it is important to develop initial CMO theories referred to in this study as "Artroom initial CMO theories" to understand potential causal connections and then test these initial CMO theories for validity and confirmation. The goal of the current research during phase 1 (see table 2 below) was to develop Artroom raw programme theories and hypotheses (table 5 and annex 13 for detail) from the available Artroom documents and published literature and its transformation to Artroom initial CMO theories (table 5). This would explore how patients and staff engage with Artroom and if there were any positive or negative outcomes. In phase 2 (see table 2 below), the aim was to test, refine and update the Artroom initial CMO theories to develop Artroom refined CMO theories (tables 7, 9, 10 and 11), through an evaluation of their application within the context of Artroom programme implemented in hospital settings in Grampian. To apply SRE framework rigorously, it was important to develop a good understanding of the programme theories about the topic under investigation (Pawson and Tilley, 1997) before they could be tested. SRE philosophy contends that hypotheses, theories and laws are subject to change with the emergence of new knowledge, but before new hypotheses and theories are developed existing knowledge should be appraised and initial theories developed (Pawson and Tilley, 1997). To adhere to this principle, this study was conducted in two phases as described in table 2.

Furthermore, as discussed above, SRE assumes an initial type of programme theory should be based on three main components: context, mechanism and outcome (Context + Mechanism = Outcome). The task here was to develop the Artroom initial CMO theories exploring short listed literature by asking the following four questions:

- How and why does the Artroom initial programme theory work, for whom, why or why not?
- In which context does the theory work, for whom, why or why not?
- What is the mechanism through which the theory works?
- If the programme theory works, what outcomes do we see?

These questions were important to develop topic guides for in-depth interviews and the questionnaire for the survey to test and refine the initial Artroom CMO theories. Table 2 below shows the main steps involved in the study to develop and refine Artroom CMO theories.

Table 2: The overall steps involved in the study and the theory development processes

Phase 1

Developing the Artroom initial CMO theories

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Step 1 → **Initial understanding** (Section 2 &3) – **To set up aims and objectives**
Review of the project documentation, GHAT and Artroom relevant papers to develop and refine research question, aims and objectives and expected outcomes for the evaluation

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Step 2 → **Launching Pad** (section 5 and 7, annex 13) –**Artroom raw programme theories**
Literature assessment to develop the Artroom raw programme theory and its transformation to the Artroom initial CMO theory. At this stage the Artroom initial CMO theories were made available (table 5) for testing and refinement which would be done in Phase 2

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Phase 2

Testing and developing the Artroom refined CMO theories

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Step 1 → **Data collection and analysis** (Section 5, annex 13) – **Refining and testing**
The preparation of the data collection was based on the topic guides for in-depth interviews and the questionnaire for the survey. The topic guides and questionnaire were developed using the Artroom initial CMO theories based on the information required to refine the Artroom initial CMO theories (table 5). Data collection was carried out using in-depth interviews and survey with Artroom artists, NHS staff, service users and GHAT coordinators

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Step 2 → C**omparison and discussion** (Section 8& 9) **Artroom refined CMO theories**
Testing the initial Artroom CMO theories to develop Artroom refined CMO theories (tables 7,9,10 and 11) and description in terms of "what works, for whom, how and in what circumstances?"

Another aspect of SRE is that it involves a process of theory building and theory testing. Each Artroom evaluation begins with a set of theoretical propositions based on the realistic evaluation idea of initial Artroom CMO theories (table 5) and ends with more refined propositions of refined CMO theories ((tables 7,9,10 and 11) and "what works, for whom, how and in what circumstances" for future testing (see in results section 8). Investigators examined how the data

collected could be marshalled for the purpose of providing a cumulative body of information on the programme's effectiveness. The transition from case-specific Artroom initial CMO theories to Artroom refined CMO theories represents a shift to a more generalised position through the transformation of individual items of data into overarching statements. Essentially, the task was to test and refine initial CMO theories that describe the working of the Artroom interventions in a particular setting in order to generate "transferable lessons" of interest to others beyond the original Artroom activities (Pawson& Tilley, 1997). Pawson and Tilley (1997) explicitly state that realistic evaluation is a systematic process of inquiry that generates distinctive research designs and strategies; it takes forward the logic of ideas which then connects different components to make sense out of it.

5. Methods and Process

A mixed-method data collection approach was applied to collect and accumulate data. Three diverse methods were used : document assessment and literature review in phase 1 to develop the Artroom initial CMO theories and, in phase 2, to test and refine the Artroom initial CMO theories, in-depth interviews and a self-administered survey were conducted. These methods are discussed briefly below. Experienced evaluators know that the practical value of social sciences depends upon its ability to deliver useful knowledge about the causes of social problems and the effectiveness of policies and programmes designed to eradicate them (Kozica et al, 2015). The complex nature and diversity of social phenomena make it difficult, if not impossible, to extrapolate conclusions based on a single set of methods or studies no matter how well designed or intelligently analysed (Pawson and Tilley, 1997). The causal process which seems to be so essential in one set of studies may prove less important in another. Programmes that work well for one set of groups may be less effective to another if the circumstances differ. Evidence suggests evaluation studies may be more reliable and achieve better cumulative results using a mixed-method approach (Patton, 1997, Pawson and Tilley, 1997).

5.1 Document assessment and literature review to develop Artroom raw programme theory- Phase 1

During phase 1, 14 selected Artroom programme reports were analysed along with four selected published papers (detail in annex 13). As a result, six initial Artroom raw programme theories and hypotheses were developed (table 5 and annex 13). Documents were assessed using close reading techniques and pencil marking on the main themes and using word files to extract major themes. The aim was to develop broad concepts and ideas at this stage. Annex 1 shows an example of how the published literature review was initiated to develop the first CMO concept before Artroom raw programme theories were conceptualised and developed.

5.2 In-depth Interviews- Phase 2

In-depth interviews are useful for collecting detailed information about a person's thoughts and behaviours or exploring new issues in greater depth. Interviews are often used to provide context for other data, such as outcome data, offering a more complete picture of what happened in the programme and why. The primary advantage of in-depth interviews is that they provide much more detailed information than is available through other data collection methods, such as surveys. They may also provide a more relaxed atmosphere in which to collect information. In-depth interviews are also recommended by Pawson and Tilley (1997) to explore and search for context –mechanism and outcome propositions. They were conducted with four

major types of stakeholders: service users; Artroom practitioners; NHS staff: GHAT staff. Seven in-depth interviews were conducted to collect data, at least two each with service users (patients); Artroom practitioners, and hospital staff respectively. Topic guides (see annexes 2-4) were prepared for each type of stakeholder, to collect the most appropriate information which could help to refine Artroom initial CMO theories.

5.2.1 Constructing the sample, selecting participants for in-depth interviews and analysis

A 'realist' inquiry aims to select a purposive sample (Pawson and Tilley, 1997). This is because the initial CMO theories are already developed in the form of Artroom initial CMO theories (table 5) and refinement of these CMO theories will be required to anticipate what type of sample is required and in which geographical area. This judgement of sample selection is important to provide relevant information. However, there is no set rule about the sample selection method, which would depend upon the nature of the study and information required to answer the research question (Robson, 2013).

At the time of finalising the methodology for this study, it was realised that using a wide range of stakeholders to gather information to evaluate Artroom would be the best means to achieve conceptual power rather than population representation. Therefore, a sample of three major types of stakeholders for qualitative in-depth interviews was selected (Table 3). A survey was also targeted at the same stakeholders so that the results could be compared to refine CMO theories.

Table 3: In-depth interviews – demographic and geographic detail

Category	Gender	Location
Artroom/GHAT staff	1 male, 2 females	Roxburghe/ Aberdeen Royal Infirmary(ARI)
Patients	1 male, 1 female	Woodend and Royal Cornhill Hospital (RCH)
NHS staff	2 females	Woodend, and Royal Cornhill Hospital (RCH) and Roxburghe House

In-depth qualitative interviews were the main building blocks of the whole evaluation process. Therefore, careful design, execution, recording, analysis and interpretation of the qualitative data were fundamentally important. Interview topic guides were prepared for three major types of targeted stakeholder (see Appendix 1- 3). Each topic guide was prepared keeping in mind the role of the respondent type and what information could be expected from that specific participant. The initial set of CMOCs, developed through literature and document reviews, were also considered while preparing topic guides. This process helped to search for explicit ideas, themes and specific information while interviewing to refine theories. The whole process was followed keeping in mind the 'realist' interview philosophy (Pawson and Tilley, year). Realist interview philosophies build upon a "teacher-learner relationship". From a "realist" perspective this provides the evaluator with the opportunity for a careful mapping of 'who knows what' as the organizing framework for data collection. This framework is then presented to participants, introducing its two key strategies: "the teacher-learner function" and "the conceptual focussing function" (Pawson and Tilley, 1997).

The teacher-learner relationship is fundamental to exploring information in an interactive way because respondents should not be treated as 'answer machines' (Pawson and Tilley, 1997). In

the teacher-learner relationship, the interview respondents were first briefed about the concept of CMO and how this formula could link causal factors, then encouraged to answer questions in terms of CMO thinking. Both evaluator and respondent took turns in becoming teacher or learner, as the respondent talks about programme ideas and the evaluator talks about preconceived theories about the programme. The information was conceptualised and analysed based on the respondent's ideas of the programme and the evaluator's theories of the programme. The mutual understanding and agreement on ideas and theories could provide valuable information.

All interviews were audio recorded with written consent from participants (Appendix 7). A Participants Information Sheet which provided full information about the Artroom evaluation was also prepared and shared with participants before the interview (Appendix 8). Transcriptions were saved on NHS password protected computers. Real names were removed at the time of transcript production to ensure the anonymity of the data. Interview duration ranged from 20 to 41 minutes, depending on the participant's role in the Artroom delivery. Interviews were conducted over a period of 5 months, between November 2016 and April 2017. The longer gap between interviews allowed time between transcription and the next interview to review CMOs and collect more information at the next interview if required, in order to refine and update theories.

5.3 Survey – Phase 2

The self administered survey provided a snapshot of attitudes and behaviours, including thoughts, opinions, and comments about the target survey population (Punch, 1998). This valuable feedback was the baseline to measure and establish a benchmark from which to compare results over time. They are conducted in non-intimidating environments, especially if self administered, as in this study. Survey results provided information about what motivates respondents and what was important to them; they gather meaningful opinions, comments, and feedback (Punch, 1998) (see appendix 4-6 for questionnaires*)*. Conducting surveys is an unbiased approach to decision-making. Unbiased survey data is collected to make decisions based on analyzed results. In order to triangulate and achieve better understanding of clients and to observe behavioural patterns and trends, a quantitative research element in the form of a self-administered survey was added to the study. The self administered survey data used in this study provided important information about the patterns and trends on behavioural, engagement and improvement aspects of the study. This statistical information was useful to evidence a range of CMO theories which also complemented qualitative data. From an SRE perspective, the surveys and other forms of statistical information provided very valuable information to refine theories and achieve scientific rigor. However, the objective of this survey and other statistical information was not to achieve scientific rigor, but to refine theories with a degree of confidence. More detail is provided in the following section.

5.3.1 Constructing the sample, selecting participants for the survey and analysis

Questionnaires (annexes 5-7) were designed and pre-tested by two stakeholders and comments were incorporated wherever appropriate. The questionnaires included questions which illustrated trends and patterns in behavioural changes and personal experiences of the stakeholders after having participated in Artroom activities.

Some of the questionnaires were completed by very young and older adults with the support of either NHS nursing staff or Artroom Artists. A total of 23 participants completed the survey, as detailed in table 4.

Table 4: Gender and age range by each group.

	Male (n-10)	Female (n=13)	Age range (years)
GHAT staff (n=6)	1	5	22-35
NHS staff (n= 5)	3	2	28-52
Patients (n=12)	7	5	7-89

12 patients participated in the study, with support from 5 NHS staff and 6 GHAT staff. In the patient sample, the age range was varied, with the youngest participant being male aged 7, and the oldest being male at age 89. All of the Artroom staff were female and the youngest staff member was aged 22. The NHS staff sample included 3 males and 2 females in the age range 28-52 years old.

There were a very limited number of people available for the survey from the three stakeholders groups. GHAT and NHS staff members who were engaged in the Artroom delivery were requested to have the survey questionnaire completed by Artroom participants. Initially, three weeks were given to return the completed questionnaires, but low returns meant more time was allowed and a further three week period offered.

5.4 Observational data

During phase 2 to develop Artroom refined CMO theories, observational data were also used. This ongoing method offered a valuable learning and understanding opportunity about aspects of the Artroom programme. Frequent meetings with the programme coordinator, programme director, and informal discussions and email correspondence with practitioners and NHS staff provided very useful information about the programme and its various contexts. A few Artroom sessions were also observed by the chief researcher, to develop empirical understanding of the Artroom. A daily diary was prepared and maintained, regular notes taken in all relevant meetings, observations and discussions which helped to understand the programme and to update and refine CMO theories at various stages of the assessment process. If something new became available after any major interaction with stakeholders, raw and refined CMOCs were updated.

6. Ethics and ethical approval

To maintain high standards of research ethics, all necessary documents, including participants information sheet (annex 8), consent form (annex 9) and participant invitation letter (annex10) were approved by the ethics committee before use.

A proportionate ethical approval was received from NRES Committees – North of Scotland and NHS Grampian Research Management and Governance Committees for both the qualitative and quantitative parts of the study before the research was administered. (annexes 11 and 12).

7.0 The Artroom theory development and refinement process

In line with SRE and the theory based evaluation approaches, there must be a programme theory to start with (Pawson and Tilley 1997), so an Artroom theory was developed, tested and refined in three distinct stages.

Stage 1

Conceptualisation and development of Artroom raw programme theory, by assessing and analysing the Artroom programme documents and relevant published literature with the aim of transforming them to CMO framework in the next stage (see table 5 and annex 13 for detail).

Stage 2

Transformation of the Artroom raw programme theories to Artroom initial CMO theories with the aim of testing and refining them in the next stage (see table 5 and annex 13 for detail)

Stage 3

Testing and refinement of Artroom initial CMO theories to develop Artroom refined CMO theories with the aim to observe the outcomes achieved and extracting what works, for whom, how and in what circumstances (see tables 7,9,10 and 11 for the Artroom refined CMO theories, section 8 and annex 13 for more detail).

Table 5: Artroom raw programme theories and initial CMO theories

Artroom raw programme theories	Themes	Artroom initial CMO theories		
		Context	**Mechanism**	**Outcome**
Creative arts activities led by artists or volunteer artists in hospitals could be a way to engage patients (C) to: ○ Improve patient-hospital-staff interactions and engagement (M)which could enhance patient trust and confidence in staff and hospital environment (O) ○ Improve patient self-esteem, confidence and cognition (O) through active engagement and participation (M) ○ Encourages patients and visitors to get involved (M) within hospital environment through displaying their own art (C) which could reduce hospital isolation, opportunity of fun and relaxing time and increase satisfaction of patients (O)	**Theme 1: Patient and visitor related - initial CMO theories**	- A fun activity with a non clinical dialogue	• Artroom activities provide a distraction from day to day disease-related, stressful situations • Keeps patients busy in fun, creative activities • Concentration and body movement are required to engage and interact in the sessions and with the group/artist/art work • Goal setting in the art making process • A time to avoid stressful clinical or hospital/sickness thinking	➢ Patient feel more relaxed ➢ Increased satisfaction ➢ Improved patient positive experience while in hospital ➢ Improved confidence and trust ➢ Increased physical movement (moving hands) and eye coordination enhances recovery process ➢ Putting control into patients' hands by giving them the choice of the colour or image they would like to work with ➢ Enhanced control and improved empowerment ➢ Reduced stress and improved positive thinking

and quicker recovery (O) ○ Art group patients could get to know each other by creating their own social network (M) which could also be useful social networking beyond the hospital environment (O) ○ Create supportive and friendly hospital environment through informal Artroom engagement activities (M) it could become a talking point among visitors/patients and staff (M) that could make regular visits and stay in hospital less stressful and enjoyable (O)	**Theme 1 – continued**	- Hospital Artroom activities led by artist coordinator - Peer support interactions - Informal and friendly environment , patients are encouraged to engage in a range of communications and share and learn art skills - Positive group dynamics - Sharing life experiences both positive and negative	• Social inclusion, hospital based social networking with other patients using art activities as a vehicle • Art making , producing art • Display of art, creative paintings and collage on hospital walls or booklets etc Appraisal by others • Motivation for patients • Level of personal interest and shared interest • Level of hospital staff interest and belief • Involvement of family members of the patient and professional support	➢ Enhanced trust of the patients of staff and hospital environment ➢ Improved confidence and self esteem ➢ Sense of some pride and worth , Artistic identity ➢ Peer art groups provided opportunity of expressions ➢ Improved cognition ➢ Improves mental health – improves mood and thinking, reduces pain ➢ Improved self esteem and confidence ➢ Faster recovery

	Theme 2: Staff and hospital related initial CMO theories	- Group interactions between staff, patients, artists -Hospital based designated art making space - Opportunity to engage in group activities and social integrations, positive ward and social atmosphere	• Engagement of staff (both clinical and non-clinical) with patients and visitors • Hospital staff believe that Artroom could help improve patient satisfaction and recovery • Positive belief of nursing staff about the impacts of Artroom • Nursing staff support the Artroom activities by engaging with the Artroom participants • The role of Artroom Artist	➢ Improved relationship with hospital staff ➢ reduce staff stress ➢ Improve staff confidence could lead to better and improved quality of services provided ➢ Improved management satisfaction could enhance hospital services quality ➢ May increase staff spare time, this spare time could be useful in improving quality, planning social inclusion activities ➢ Less pressure on nursing staff
	Theme 3: Organisation related outcomes - initial CMO theories	- Artroom participatory art in hospital setting - Hospital management and clinicians support the Artroom concept	• Patients think of social interactions, away from the boring times and pain in the body while in bed • Patients feel included • Motivation due to social activities • Engagement of NHS staff, patients and visitors	➢ Improved quality of life for patients and visitors , enhances trust in hospital and services ➢ Improved staff health through a less pressurised environment and some free time ➢ Improved GHAT's acceptability among staff and patients/visitors and hospital management ➢ Increase sustainability and embedding the Artroom activities within the hospital environment

	Theme 4: Supporting and hindering factors	- Artroom supporting and hindering factors - Sustainability	• Attitudes and art activities • Preconception about art • Access and funding challenges • Wider support communicating and coordination issues	➢ Negative outcome- Lack of funding, engagement, coordination and communication ➢ Doubts about art activities among clinical staff ➢ Lack of awareness about Artroom activities in the hospital ➢ Management NHS staff past experiences and belief about the role of art in patient wellbeing

8.0 Results – Testing and refining the Artroom initial CMO theories

In this section the results of the evaluation study are presented. The Artroom initial CMO theories presented in table 5 above were tested and refined using in-depth interviews and survey data as discussed in detail in the methods chapter. The Artroom initial CMOs are also presented here on the left and the refined CMO theories on the right in tables 7,9,10 and 11. At the end of each refined set of CMOs, propositions in the form of what works, for whom, how, and in what circumstance are provided with the intention that these propositions can be generalised with a degree of confidence.

8.1 Theme 1: Patient and visitor related outcomes

8.1.1 Patient and visitor related refined CMO theories 1&2

The first and second refined CMO theories produced four mechanisms as shown in table 7. The first CMO through M1 & M1a showed the hospital's social and participatory art environment where patients also had an opportunity to do some physical activity in terms of moving different parts of their body (M1 & M1a) which contributed to a series of positive outcomes linked to M1 and M1a (table 7). There was probably no intention or plan by the artists to improve physical strength of the patients, but it might be an unintended outcome as much of the Artroom focus was to improve confidence and social inclusion, which in turn could improve health. In-depth interview data showed patients did not only experience improved mood, feelings and networking, but the Artroom participatory activities also had a profound effect on their physical strength (table 7) and M1 and M1a linked outcomes as in these examples shared by NHS and Artroom Artists.

"There were certainly a marked improvement in their mood, how they were feeling, their physical capabilities, you know previously they had been lying in bed and not able to get up, and here they were sitting at this table for two hours, painting or drawing or whatever it was that they decided to participate in". (NHS nurse practitioner)

"Yeah. I would definitely think... physical coordination, hand and eye coordination improved". (Artroom Artist)

Patients also confirmed during in-depth interviews how participatory art activities impacted their life during their hospital stay. This is how a patient reflected on the experience:

"...when I had been to the Artroom, apart from the fact I was filthy with charcoal, by the fact that I could speak more quickly, more clearly, I had less slurring of my words, more enthusiasm. And... the cognition is in, I could actually come away and think, 'okay, I want to do that little bit more', and I had already set myself goals in art, I would set myself goals with my reading, with my, contemplating." (Artroom participant- Patient)

There was also evidence of improved relationships with peers and increased trust in hospital staff, which might have improved patients' overall behavioural issues (M1 and M1a and linked outcomes in table 7).

The second refined CMO theory in table 7 (M2 &M2a) showed more convincing outcomes linked to mechanism of avoiding the thinking of living in a clinical/hospital environment. The

hospital's Artroom social environment provided patients an opportunity to think more positively about their family members and create something artistic which could be presented to a family member. The thinking improved patients' hope and sense of purpose and gave them a feeling of achieving something meaningful. This process might have led to a less stressful time in hospital and faster recovery. This environment also provided an opportunity for patients to think and share more positive life experiences through the Artroom as a social network. The whole process produced a series of positive outcomes as shown in the linked outcomes to CMO 2 (M2 &M2a) in table 7.

One of the Artists shared her views in this quote about how patients could develop hope and a sense of purpose:

"Whether that's been the purpose of being a parent or a loved one or an employee, or, anything, that sense of purpose does not go. And while they're at that art group, that's two hours they have a sense of purpose, they have a sense of activity to create something for their family members" (Artroom artist)

Interview data confirmed that there have been different ideas about the effects from a palliative care perspective, as it could be more challenging: however it could still offer a short term benefit in terms of avoiding or ignoring thoughts of dying (see outcome 6 in table 7 M2 and M2a in CMO 2) and provide a short term feeling of better quality of life. For example see this quote:

" I am not too sure if recovery is possible at all for patients here at Roxburghe House, but it could be a temporary support in diverting thinking about their life which could be helpful, a short term benefit may be better quality of life" (Artroom artist)

Survey results provided similar evidence, using a scale of 0-4 as measurement. Table 6 shows mean scores of the Artroom stakeholders relating to a range of health and wellbeing statements. Statements 5, 6 and 9 in the patient column clearly show higher mean scores related to feelings of a sense of achievement, better mood and lower stress levels when participating in the Artroom activities.

Both patients and GHAT staff felt equally comfortable participating in Artroom, with a slightly lower score from NHS staff. Patients expressed higher feelings of achievement, satisfaction and improved self-esteem in comparison to NHS and GHAT staff. NHS staff reported feeling more confident, less stressed, more in control and more empowered. NHS staff and patients reported similar feelings of improved relationships with staff/patients. On all questions, GHAT staff reported the lowest scores. This was most apparent on questions regarding improved self-esteem and feeling in a better mood with more energy to spare. Overall, it would suggest that the Artroom was most beneficial to the health and wellbeing of patients and NHS staff.

Table 6: Mean and standard deviations across all comparable questions in Q2 addressing health and wellbeing concept.

	NHS Staff (n=5)	GHAT staff (n=6)	Patients (n=12)
1.I have felt comfortable participating in art group and Artroom	3.6±0.5	4.0±0	4.0±0
2.I have felt satisfied	3.6±0.5	3.6±0.8	3.7±0.5
3.I have felt confident	3.7±0.5	3.3±0.8	3.4±0.7
4.I have improved self-esteem	3.4±0.8	3.0±1.1	3.6±0.5
5.I have felt some sense of achievement	3.7±0.5	3.6±0.9	3.9±0.3
6.I have felt in a better mood and have more energy to spare	3.7±0.5	2.8±1.1	3.8±0.5
7.I have an improved relationship with patient/staff	3.6±0.5	3.1±1.1	3.6±0.7
8.I have felt in better control and empowered	3.6±0.9	3.1±0.9	3.3±0.9
9.I have felt less stressed	3.4±0.8	3.0±1.4	3.2±0.8

8.1.2 Patient and visitor related refined CMO theories 3&4

The third and fourth refined CMO theories produced four mechanisms and a series of positive outcomes related to context 2 about peer support, social engagement and hospital staff support as in table 7 (CMO 3&4 , M1,M1a, & M2, M2a table 7).

The third refined CMO theory (M1 &M1a in table 7) showed how motivational comments from family members and NHS staff, along with the thinking of moving away from the clinical environment, could positively impact on achieving a series of positive outcomes as shown in CMO 3, M1 &M1a (table 7). The outcomes showed that approval and appreciation of creative achievements could affect the thinking process and participants of the Artroom could start feeling empowered, stronger and in better control. An NHS staff member viewed this process as escaping from a difficult situation as in this comment:

"...actually they're able to step outside a little bit, and it's also a bit of escapism as well you know, because its thinking well I'm actually doing something I don't have to think about my illness or what's happening in the future" (NHS Staff nurse)

Survey results in table 6 also provided further confirmations that most NHS staff were thinking more positively in terms of improved confidence, control and feeling better when engaged with Artroom activities.

Improved self esteem and empowerment could be achieved when people felt more in control, valued, approved and in a positive social environment. The outcomes could have direct links to improved overall hospital stay conditions and better satisfaction for patients and staff and could have links to faster recovery.

The fourth refined CMO theory produced positive outcomes through M2 and M2a (table 7) mainly about feelings of being encouraged and listened to by hospital staff. The outcomes achieved were impressive in terms of decreased level of aggression, sense of pride and improved cognition which was then related to a range of wellbeing elements such as confidence, trust, recognition and becoming independent (CMO 4, M2 and M2a in table 7). The in-depth interviews clearly showed evidence of these outcomes as in these examples

"The art thing gives sense of pride and achievement and self-esteem that gives you, especially when you're in a difficult situation and you've lost your role in life" (Artroom participant - Patient)

"I felt, could achieve things and the knowledge of achievement is quite an infectious carry-over thing, because, well if I can achieve this, maybe instead of having to have people support me to get to the toilet I can do it myself, and I saw that in other participants as well". (Artroom participant - Patient)

Survey results provided further evidence of these outcomes which contributed towards CMO 3&4 outcomes about confidence levels as seen in table 6. Statements 3, 4 and 8 show higher mean scores, where most participants either strongly agreed or agreed with the statement. The positive outcomes were observed and shared by all of the stakeholders including NHS staff, patients and GHAT staff.

Table 7: Theme 1- Patient and visitor related - initial CMO theories and refined CMO theories

Artroom initial CMO theories			Artroom refined CMO theories		
Context	**Mechanism**	**Outcomes**	**Context**	**Mechanism**	**Outcomes**
A fun activity with a non clinical dialogue	• Artroom activities provide a distraction from day to day disease-related, stressful situations • Keeps patients busy in fun, creative activities • Concentration and body movement are required to engage and interact in the sessions and with the group/artist/art work • Goal setting in the art making process • A time to avoid stressful clinical or hospital/sickness thinking	➢ Patient feel more relaxed ➢ Increased satisfaction ➢ Improved patient positive experience while in hospital ➢ Improved confidence and trust ➢ Increased physical movement (moving hands) and eye coordination enhances recovery process ➢ Putting control into patients' hands by giving them the choice of the colour or image they would like to work with ➢ Enhanced control and improved empowerment ➢ Reduced stress and improved positive thinking	**Context 1** A non clinical dialogue in fun based art activities - Positive social environment using participatory art as a vehicle **CMO 1 & 2**	M1. A few hours of participation in art activities and social engagement within hospital environment every week M1 a. Art activities require people to move their body in different directions to use paper, colour, pencils and so on **CMO 1**	O1. Improved relationship with peers and staff O2. Improved self esteem and control O3. Improved trust in staff and hospital environment O4 Marked improvement in physical and cognitive behaviour i.e. movement of hand, head, eyes and sometimes legs O5 May require less medication i.e. pain killers
				M2. A time to avoid stressful clinical and medical environment and developing something or creating a piece of art for their family members	O1. A time to relax and release stressful situation O2. Improved positive thinking and hope O3. Sense of purpose and achievement for their own family members O4. Faster recovery for people

				M2 a. Sharing life experiences both positive and negative with staff and peers **CMO 2**	with range of conditions such as CVDs O 5. Improved confidence and mutual trust O 6. Recovery term may be challenging from a palliative care perspective, but may support patients to avoid intense negative thinking
- Hospital Artroom activities led by artist - Peer support interactions - Informal and friendly environment , patients are encouraged to engage in a range of communications and share and learn art skills - Positive group dynamics - Sharing life experiences both	• Social inclusion, hospital based social networking with other patients using art activities as a vehicle • Art making , producing art • Display of art, creative paintings and collage on hospital walls or booklets etc Appraisal by others • Motivation for patients • Level of personal interest and shared interest • Level of hospital staff interest and belief	➢ Enhanced trust of the patients of staff and hospital environment ➢ Improved confidence and self esteem ➢ Sense of some pride and worth , Artistic identity ➢ Peer art groups provided opportunity of expressions ➢ Improved cognition ➢ Improves mental health – improves mood and thinking, reduces pain ➢ Improved self esteem and confidence ➢ Faster recovery	**Context 2** Peer and artist supported participatory art and social environment Engagement with Artroom supported by hospital clinicians, management and hospital policy **CMO 3&4**	M1. Positive comments and motivation by peers, family members, NHS staff and Artists M1 a. To get away from the ward and healthcare environment **CMO3**	O1. Less slurring in words due to peer supported social interactions O2. Improved self esteem and empowerment due to approval and appreciation by peers, staff and family members O3. Escape of ongoing negative medical restrictions and clinical environment lead to positive thinking O4 Improved control, body aches and pains

positive and negative	• Involvement of family members of the patient and professional support			M2. Feelings of being engaged, involved, listened and valued M2 a. Hospital staff encouragement and involvement and individuals' personal interest **CMO 4**	O1. Decrease level of aggression and agitation O2. Recognition as a lay Artist O3. Sense of pride and approval could improve range of positive factors i.e. positive thinking and calmness O4. Doing things actively for yourself rather than depending on others O5 Improved cognition

8.1.3 What works, for whom, how, and in what circumstance?

What works?

1. Participatory art environment is not only a social environment, but also provides opportunity to create something to express yourself and is linked to confidence, self-esteem, pride and a sense of achievement.
2. Sharing life experiences in a peer setting is linked to a feeling of being more confident through the links of motivation, appreciation, approval and encouragement.
3. Art activities could improve physical and cognitive processes as they involve hand, eye, head and arm movement. This process could also lead to faster recovery and better quality of life.
4. Participatory arts could reduce pain and negative thinking, improve control, confidence and mutual trust through the mechanism of social interactions.

For whom?

Patients/Visitors, NHS Staff, GHAT staff, GHAT policy managers.

How?

1. When there is opportunity to be engaged and involved in social and arts related activities during a stay in hospital.
2. When the patients feel that they are listened to, given value and feel positive about arts and participatory arts activities, and are willing to engage in the process.
3. When family members are more actively engaged.
4. When mechanisms of social networking and arts activities are triggered through a hospital based setting.

In what circumstance?

1. When there is participatory art offered in the hospital setting
2. When there is encouragement from peers, NHS staff and Artroom Artists
3. When there is choice of art activities available
4. When the Artroom Artists' attitude is positive and encourages patients to engage
5. When there is a safe environment to share personal life experiences

8.2.0 Theme 2 Staff and hospital related outcomes

8.2.1 Staff and hospital related refined CMO theories 1&2

The first and second refined CMO theories produced two main mechanisms and a series of outcomes linked to context 1. The first refined CMO theory (CMO 1, table 9) achieved five outcomes linked to patient behaviour towards Artroom and NHS staff, family and visitors engagement context (CMO 1 and M1 linked outcomes in table 9). In-depth interviews confirmed that there was a marked decrease in aggression and violence related issues recorded through the Datix risk register and a series of benefits linked to this outcome as seen in table 9 (CMO 1 and linked outcomes). In a hospital environment, controlling patients' aggressive behaviour can be a challenging task which may take much nursing staffs

time. Artroom activities showed a significant improvement in the number of incidents and a 'calming down' effect which was reported by staff and patients as seen in these examples.

"...there was a marked decrease in incidents according to the Datix reports and it's during the time the art room's on" (NHS Staff member)

"There's quite a lot of incidents of violence and aggression, but on a Friday afternoon it's really calm and chilled due the art sessions" (NHS Staff member)

There were clear benefits to hospital and staff in terms of a calming environment, less challenging behaviour from patients, more time for non-patient related duties and sense of better performance among NHS staff.

The second refined CMO theory produced five outcomes linked to (CMO2, M2 in table 9), staff belief and hospital management and artists' support in delivering the Artroom. Positive belief of NHS staff played a pivotal role in supporting the Artroom activities and creating a social environment for patients and staff. The outcomes achieved were important in terms of better relationships, patient satisfaction, breathing space and lower stress levels among nursing staff. Some participants believed that even if they had no idea about arts, the environment was still very supportive, pleasing and satisfying as seen in this quote:

"We've got families come in to sit with the patients when they're doing art, and whether they're just holding a brush, the socialising, they might not paint anything at all, but the social aspect of being around a table , they seem to really enjoy and stay calm".(Artroom Artist).

Survey data confirmed these findings as there was significant improvement in staff and hospital related outcomes as figure 3 below shows NHS staff reported the highest scores on having more energy to spare, feeling confident, a sense of achievement, and enjoyment in supporting the activities. In comparison to NHS staff, GHAT staff felt more comfortable participating and felt more satisfied. GHAT staff reported the lowest score on feeling they had more energy to spare and improved self-esteem. Many of these observations are linked to the outcomes showed in the CMO 1&2 in table 9 and linked outcomes both in M1 and M2.

In addition table 8 shows an Artroom related case study from a user's perspective which shows how participants could move on from a state of low confidence to engaging very actively in arts related activities.

Figure 3: The GHAT and NHS staff mean response to questions regarding health and well-being concept.

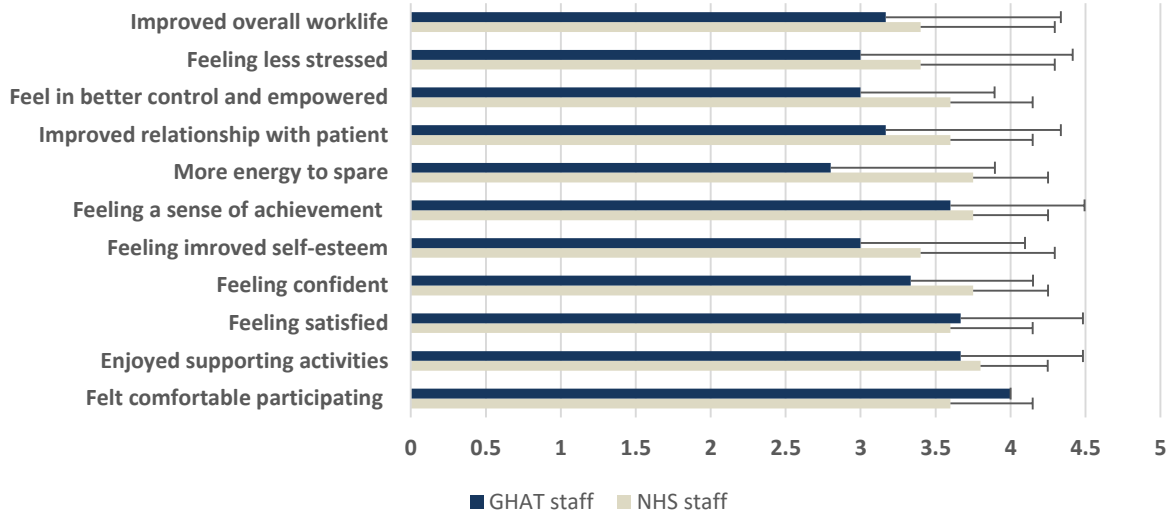

Table 8: The Artroom case study from a user perspective – Any Body Can Do Art (ABCDA)

"*There was a great case study, and it was this older lady who had made it quite clear she wasn't having anything to do with art and she wasn't coming through, and each week the artist has kept checking with her and kept saying, so eventually after a few weeks of trying she said 'I'm coming through, but I'm not doing anything'. So she was quite adamant she wasn't going to do anything, she came through and then she ended up through the process that the artists take the people through. She ended up painting, and her whole bedroom area around her bed was festooned with all these wonderful brightly coloured paintings and this was the women who was never willing to engage with art because of her feeling that art things are not for her, she had not interest*". (An Artroom participant at Woodend Hospital)

Table 9 : Theme 2- Staff and hospital related initial CMO theories and refined CMO theories

Artroom initial CMO theories			Artroom refined CMO theories		
Context	**Mechanisms**	**Outcomes**	**Context**	**Mechanisms**	**Outcomes**
- Group interactions between staff, patients, art coordinators - Hospital based designated art making space - Opportunity to engage in group activities and social integrations, positive ward and social atmosphere	• Engagement of staff (both clinical and non-clinical) with patients and visitors • Hospital staff believe that Artroom could help improve patient satisfaction and recovery • Positive belief of nursing staff about the impacts of Artroom • Nursing staff support the Artroom activities by engaging with the Artroom participants • The role of Artroom artist	➢ Improved relationship with hospital staff ➢ reduce staff stress ➢ Improve staff confidence could lead to better and improved quality of services provided ➢ Improved management satisfaction could enhance hospital services quality ➢ May increase staff spare time, this spare time could be useful in improving quality, planning social inclusion activities ➢ Less pressure on nursing staff	NHS staff and patient opportunity to engage with Artroom Wider group interactions among NHS staff, artists and visitors CMO 1 &2	M1 Patient behaviour and NHS staff, family and visitors' engagement and support CMO 1	O1. Marked decrease in the incidents on the Datix system after the Artroom sessions O2. NHS nursing staff spared some extra time when patients busy in Artroom activities O3. Marked improvement in patient behaviour and significant decrease in routine challenging issues, quicker patient recovery, better patients satisfaction O4 Family members and other visitors feeling better and satisfied with hospital environment O5 For some staff and patients the Artroom room is a therapeutic activity

				M2. Positive NHS staff belief about Artroom outcomes and ward level support from clinicians, managers and Artroom Artists CMO 2	O1. Reports of better patient satisfaction , improved relationships between staff and patients O2. Improved staff confidence and trust in hospital and management O3. Decreased stress levels in nursing staff O4 A respite and breathing space for nursing staff for a while O5 Excellent relationship between artist, patients and NHS staff could have played an important role in improving the conditions for patients at the hospital O5 Artroom artists were excellent, relaxed, polite, warm and welcoming, friendly, compassionate, always with meaningful conversations and never stressed or rushing which could have significantly contributed towards more positive outcomes

8.2.2 What works, for whom, how, and in what circumstance?

What works?

1. NHS Staff and GHAT Artroom staff work together to design and deliver the Artroom activities in a partnership approach. A co-produced Artroom activity performs better.
2. Patients and family members experienced improved socialisation and art making creative skills.
3. Artroom is a vehicle to improve a range of factors known to contribute towards quicker recovery and patient satisfaction.
4. NHS staff could have more time to spare, less stress and a sense of improved performance.

For whom?

Patients, family members/visitors, NHS staff and NHS managers

How?

1. When there is good communication among all the stakeholders.
2. When GHAT Artist actively engages and encourages NHS staff, patients and visitors.
3. When NHS management are willing to support the Artroom concept and improve access.
4. When NHS staff believe that arts and participatory arts could be a good way of developing a social network within the hospital environment.

In what circumstance?

1. A designated Artroom space made available and advertised to all patients, family members and NHS staff.
2. Funding support offered to carry out the activities.
3. Artists are skilled, considered, and have deep interest in working with challenging patients.
4. Appropriate time allowed to art practitioners to develop the project.
5. NHS staff willing to come on board and support Artroom implementation.

8.3.0 Theme 3: Organisation related outcomes

8.3.1 Organisation related refined CMO theories 1&2

The first and second refined CMO theories in table 10 produced motivation, inspiration (M1) and overall positive hospital environment (M2) mechanisms to achieve a series of improved outcomes for everyone involved in the Artroom. Under the context of a ward setting and participatory art, the Artroom activities improved trust, confidence of patients and visitors, contributed to a calming environment and reduced challenging behaviour and incidents through motivation and inspirational mechanisms linked to patients' family members. Patients believed that there was a sense of achieving meaningful things for their family as in CMO 1 (M1 in table 10), which could be an influencing and triggering factor for feeling better, valued and a productive member of the family and society. This feeling could

produce a calming effect. The whole situation could create a better and more relaxing environment and could benefit hospitals and NHS staff in many ways as in M1 and the linked outcomes. For example people believed in and greatly valued the Artroom activities and linked them to the overall hospital and clinical environment as observed in these examples:

"Well I'm a total convert, because anyone who is in hospital long-term knows how mind-numbingly boring it can be. Art encouragement and aspiration can be great if you're in the hospital for a long time. And yeah, the nursing staff and the medical staff do their best, but at the end of the day they're dealing with things about you, rather than you" (Long-term patient and Artroom participant)

So now, it's given them a therapeutic activity, it's not such a long afternoon, they're not staring at things like television, so for the patients, they do get enjoyment out of it.(Artroom participant- Patient)

The second refined CMO theory in table 10 showed more convincing evidence in achieving better outcomes from an organisational or hospital perspective as this can be observed in M2 and linked outcomes (CMO 2 in table 10). Evidence from in-depth interviews showed how Artroom could create a supportive environment for NHS staff and create conditions to improve challenging situations as in this example.

"Over the course of the past nine months, staff have realised how important it is to keep patients engaged, so now they see the art group as a meaningful activity for the patients to be engaged in, so it's kind of a bit of respite for the staff, benefit hospital in many ways, the staff know the group's on and they can do what they need to do, but know that the patients are cared for. (Artroom Artist)

The survey results also complemented this evidence as they showed higher mean scores for NHS staff (figure 3 above) in many important factors such as improved work life environment, less stress, more energy to spare, improved relationship with patients.

Table 10: Theme 3- Organisation related outcomes, initial CMO theories and refined CMO theories

Artroom initial CMO theories			**Artroom refined CMO theories**		
Context	Mechanisms	**Outcomes**	**Context**	**Mechanisms**	**Outcomes**
- Artroom participatory art in hospital setting - Hospital management and clinicians support the Artroom concept	• Patients think of social interactions, away from the boring times and pain in the body while in bed • Patients feel included • Motivation due to social activities • Engagement of NHS staff, patients and visitors	➢ Improved quality of life for patients and visitors, enhances trust in hospital and services ➢ Improved staff health through a less pressurised environment and some free time ➢ Improved GHAT's acceptability among staff and patients/visitors and hospital management ➢ Increase sustainability and embedding the Artroom activities within the hospital environment	Participatory Art activities in a ward setting CMO 1 &2	M1 Motivation and inspiration for patients to get engaged in a safe and secure environment and do something for their family members in terms of preparing a card or a drawing or a piece of an art. **CM 1**	O1. Enhanced trust and confidence of patient and visitors on hospital O2. On the day of Artroom activities it is very calm and quiet, compared to other days when there is usually aggression and violence O3. Significant reduction in challenging incidents O4 Positive feeling of doing something meaningful
				M2. Patients feel included, staff feel positive and engaged in informal social ward level art activities. Non-verbal communication with caring and compassionate attitudes **CMO 2**	O1. Improved patient/staff coordination, understanding, and mutual trust O2. Improved patient and management satisfaction O3. More homely feeling at some point O4 Artroom is being increasingly accepted by NHS staff and patients O5 Artroom is a vehicle to improve the overall tense hospital environment into a positive social environment.

8.3.2 What works, for whom, how and in what circumstance?

What works?

1. The Artroom activities could significantly reduce aggression, violence and challenging behaviour if patients are involved and engaged.
2. NHS staff and GHAT Artists influenced and motivated patients to create interesting things for their family members using Artroom activities. Motivation is a desire to satisfy internal human needs and it could be that appreciation and approval have influenced patients positively to move to a more positive behaviour.

For whom?

NHS staff, GHAT staff and family members

How?

1. Simple conversation turns into strengths, passion and deep interest in an opportunistic environment supported by an artist.
2. Motivational words and positive and caring non-verbal gestures were found to influence patients very strongly to show positive behaviour and feel better factor.

In what circumstance?

1. When the resources are organised and enabling conditions are created by the hospital staff with a belief that Arts activities could improve patient compliance.
2. When there is a designated place for Arts activities in hospital.
3. When there is an opportunity to escape the medical or clinical environment.
4. When Artists and NHS staff clearly show a caring and compassionate attitude through non-verbal communication.

8.4.0 Theme 4: Supporting and hindering factors

8.4.1 Supporting and hindering factors and refined CMO theories 1&2

The first and second refined CMO theories proposed both positive (M1) and negative (M2) outcomes as shown in table 11. The first refined CMO theory (M1) proposed five outcomes related to communication and staff experiences and support mechanisms. Good communication, passionate Artroom artists, support from NHS clinicians and managers, wider engagement with patients' family members and staff, and a good choice of participatory arts were seen as the main linked factors to achieving better outcomes (CMO1 M1 in table 11).

The second refined CMO theory in table 11 (M2 and linked outcomes) produced a series of negative outcomes under the context which shows hindering or challenging factors in designing and delivering the Artroom. Some people have preconceived ideas or negative past experiences about arts and the belief that arts related activity are not for them and it is a waste of time. These issues were coupled with lack of NHS support, engagement and access issues. Physical access in relation to patients' disability and lack of engagement could

limit access to Artroom for some patients. In some hospitals there was no designated place for Artroom due to lack of communication and coordination between GHAT Artists and NHS nursing staff, as raised in this example;

"one of the big things I think which is really important is getting the communication between GHAT staff and the GHAT workers and the GHAT artists and the NHS workers and staff so that the project in every unit is embedded" (GHAT staff member)

Lack of coordination to plan the Artroom activities was another challenging issue. This challenge was also linked to professional jealously and power issues where some hospital staff might have felt that their power was taken away. This problem was raised during in-depth interviews, as in this example;

"sometimes there can be a little bit of a territory issue, not often, sometimes there is a little bit of sort of jostling for power and... but that with a bit of communication a bit of a sit down and a talk about what we are doing makes them realise that we're not taking over anybody else's therapeutic value because we are not therapists and that we are not delivering an activity for activity sake" (GHAT staff member).

These types of problems could create hindrances in the smooth delivery of Artroom activities and low participation is usually reported in these situations.

Table 11: Theme 4- Supporting and hindering factors, initial CMO theories and refined CMO theories

Artroom initial CMO theories			Artroom refined CMO theories		
Context	**Mechanisms**	**Outcomes**	**Context**	**Mechanisms**	**Outcomes**
- Artroom supporting and hindering factors - Sustainability	• Attitudes and art activities • Preconception about art • Access and funding challenges • Wider support communicating and coordination issues	➢ Negative outcome- Lack of funding, engagement, coordination and communication ➢ Doubts about art activities among clinical staff ➢ Lack of awareness about Artroom activities in the hospital ➢ Management NHS staff past experiences and belief about the role of art in patient wellbeing	Artroom supporting, hindering factor and sustainability options CMO 1 &2	M1 Communication, artist experience and NHS staff and management support CMO 1	O1. Good communication between NHS staff and the artists played a vital role to smoothly run the Artroom project O2. The experience and the passion of artists makes difference in progressing smoothly and engaging well with patients O3. The Artroom projects were more successful where there was good level of support from NHS clinicians and managers O4 Listening and engagement with visitors and the family members. This helped in many situations to know about the participants' likes and dislikes O5 A choice of participatory art activities was available ranging from fine arts, clay work, drawing, painting to sculpture, books, and music.

				M2 Preconceived ideas, lack of engagement funding problems, access issues CMO 2	Negative Outcomes O1. Preconceived ideas about art activities depending on individual previous experience in regards to art could lead to misinterpretation of participatory art value. Some people have fear that 'I can't do it'. O2. Lack of encouragement could hamper progress to engage with patients and missing out the social interaction O3. Physical access challenges to some patients, especially if the wards are too far from the Artroom place O4 Lack of coordination between GHAT , artist and NHS healthcare teams O5 Lack of designated venue in most hospitals is an issue to run Artroom sessions O5 Lack of awareness among some nurses and clinicians about the role of art in healthcare improvement O6 Patient communication issues were also barriers in participating in Artroom O7. Lack of clear and robust evidence of participatory art on patient wellbeing O8 Some senior level NHS staff do not believe that Artroom contributing in any way towards patient outcomes

8.4.2 What works, for whom, how, and in what circumstance?

What works?

1. A clear communication strategy and awareness raising plan about the Artroom activities.
2. A wide range of Artroom activities including painting, drawing, sculpture, clay work, music, singing and so on will attract more people to make choices based on their interest.
3. Close coordination and partnership between GHAT artists and NHS Staff could reduce confusion and improve opportunities and access of patients and visitors/family members.

For whom?

NHS staff, managers, GHAT staff and patients

How?

1. Challenging potential low expectations and over-emphasis on the limitation of the patients' abilities.
2. Overcoming preconceived ideas and negative perceptions about arts.
3. Improved awareness and marketing about the Artroom and better collaboration among all the stakeholders.

In what circumstance?

1. When wider support from NHS staff is available to run the Artroom and NHS management facilitate the organisation of the Artroom activities.
2. When patients and NHS staff take interest in the Artroom and are willing to engage in the process.
3. When senior level clinical and management staff directly engage in the design and planning process of the Artroom activities.

8.5 Artroom model of delivery

There was no prescribed formal model of Artroom delivery. GHAT Artists use their own imagination to set up Artroom activities based on participants input. Table 12 is an applied model in most settings, but not a unified and agreed way of Artroom delivery.

Table 12: Informally applied Artroom model in NHS Grampian

Artroom applied model
➢ Discussion with patients and hospital staff/nurses/doctors/psychologists to explore which patients could benefit and are interested ➢ Informally chatting with potential patients – a few weeks to develop relationships and trust , understanding the person – person centred approach ➢ To show examples of creative arts which others have done – politely engage in the conversation and motivate patient to try something ➢ Encourage and motivate to improve confidence ➢ To provide variety of visual simulation and points of interest i.e. post cards, natural objects, fabrics and bric-a-brac ➢ Set up the tables and chairs and coffee for the start up to make patients more comfortable ➢ Chatting with patients at their own pace rather than pressure talk, slow and steady getting to know patients and showing the art work, learning by doing ➢ Introduction of creative activities based on group interests and developed relationship may be after 3-4 weeks ➢ Engagement of family and carers, nurses help and support ➢ Display patients artwork on walls of the ward for encouragement ➢ Continue developing and supporting the Artroom activities

9.0 Discussion

9.1 The process of causation

Evaluation is about understanding the difference made by interventions for stakeholders (WHO 1998). At the end of the intervention, programme managers and policy drivers ask; did it work and did it make the service users healthier, wealthier and safer. By doing this, an attempt is made to demonstrate causal relationships between interventions and outcomes, by using some kind of framework or theory. It is that framework or theory which tries to evidence the scientific logic to demonstrate the causation process to help stakeholders and academics understand how the difference was made. There are two main scientific theoretical processes, 'secessionist' and 'generative', to explain the causation process (Pawson and Tilley, 1997).

Secessionists follow the logic of experimentation and quasi-experimentation famously known as the 'classical experimental design'. The logic can be easily understood by following figure 4.

Figure 4: **Classical experimental design representation**

	Pre-test	Treatment	Post-test
Experimental group	O1	X	O2
Control group	O1		O2

The basic idea of the classical design is the random allocation of subjects to experimental and control groups (O1 in the figure above) and intervening with exposure to the experimental group (as x marks intervention) but not the control group and the application of pre-treatment and post-treatment measures in order to compare the change in the two groups (O2). At the end, any behavioural differences measured are believed to be the treatment effect. The researcher applies the regime of control, manipulation and observation which means no more information is required to extrapolate that cause and effect are linked. The process of treatment and outcome links means the causation process is only 'external' which means we cannot observe certain causal forces at work (Pawson and Tilley, 1997). There is no consideration of stakeholders' powers, and liabilities. These powers and liabilities of programme stakeholders are deemed important in scientific description as well as in everyday life because we can make sense and link them to various outcomes achieved in a logical way (Pawson and Tilley, 1997).

SRE applies the generative theory which is based on the concept that there is a real connection between events and in order to define the process of causation, there is a need to understand these connections. The events are not merely the outcome of input and output, but complex phenomena of events and forces at work (Pawson and Tilley, 1997). There is a need to explore and explain all the forces, powers and liabilities of stakeholders in systematic and logical ways rather than only considering the programme inputs and outputs as the key factors. For example empowerment, self efficacy, confidence and control among Artroom service users has been achieved not only as a result of the Artroom programme itself, but also because of multiple links, mechanisms and contexts which triggered these outcomes. Therefore it is not a valid scientific explanation to say that the Artroom programme is successful because particular interventions and specific resources were applied. It is also necessary to consider the influencing factors which triggered service users, Artroom practitioners and managers to adopt a particular behaviour or to act in a specific way in order to make things happen. These triggering factors could be social engagement activities, Artroom interventions, coordination, collaboration and communication between NHS staff and GHAT Artroom artists, or even smaller units of these factors;. the running of an Artroom drawing session, colouring and painting, social meeting over a cup of coffee. So the generative process not only explains the external factors such as the programme itself and its various inputs, it also considers the 'internal' triggers. These 'internal' triggers might be the specific efforts of the stakeholders to organise a range of

developmental activities and how these activities were planned, implemented and regularised.

The assessment of these 'realistic' activities in a logical way was important to get to the point of understanding the causal process which might have led to achieve certain outcomes through a specific mechanism, under certain conditions. In brief, the generative theory sees the causation process as 'internal' as well as 'external'. An outcome achieved may well trigger another outcome to happen under the right conditions, in the right time, place or circumstances.

9.2 Artroom initial programme theory development process

SRE starts with the process of developing initial programme theories from carefully selected relevant literature. For this study, 14 Artroom related papers and four relevant published papers (annex 13) were used to develop the Artroom raw programme theory (table 5, annex 13). Due to the complex nature of the Artroom programme, time constraints and multiple sources of data, the reports and published evidence papers were not particularly thematically analysed by using a specific framework. Also this could have confused the programme theory development phase, because the Artroom programme theories were mainly based on the Artroom literature and broader thematic topics and there was danger of too many themes appearing during thematic analysis. Shortlisted and selected literature (annex 13) was thoroughly read using close reading and rereading techniques (Braun and Clark, 2007) with the aim of organising theoretical statements under broader concepts (Pawson and Tilley, 1997). Ideas and concepts were developed in the process of reading and rereading. This process was labour intensive, but provided valuable insight into the Artroom raw programme theories (table 5 and annex 13) as a first picture of the complicated jigsaw. There were a number of theories in the literature and the first challenge was to organise them into a logical format under various thematic concepts. The SRE framework helped to overcome this challenge as it provided a clear structure to shape the theories in a systematic and sensible manner and the Artroom programme theories transformation into the CMO framework (see table 9 Artroom initial CMO theories). The initial CMO theories presented in table 5 were the first logical picture organised under four thematic topics: patient and visitor related outcomes; staff and hospital related outcomes; organisation related outcomes; supporting and hindering factors. The initial CMO tables provide context, mechanism and outcome as abstract links to each other. At this stage there were unconfirmed connections between context and mechanism and between mechanism and outcome. The abstraction of theory development process is a useful concept discussed by Pawson and Tilley (1997). It was an important strategy as at this stage, it was not clear which mechanism leads to which outcome. There were more than one mechanisms and in some cases more than two or three mechanisms which were possibly linked to specific outcome(s). Abstraction provided flexibility to deal with these unclear links with a degree of confidence that this issue will be dealt when the theoretical testing process is complete. The Artroom initial CMO theories were now available to be tested in phase 2. The Artroom refined CMO theories were then prepared after the testing process through in-depth interviews and survey and presented in the results section 8, with clearer links between SRE elements of context, mechanism and outcomes.

9.3 Discussion on the main themes

9.3.1 The Artroom activities and the model of delivery

Participatory art is useful, valuable and contributes to patients' wellbeing from many perspectives described in the literature (Stuckey and Nobel, 2010; Ettun et al, 2014; Sonke et al, 2015). There are many forms of arts and participatory arts which showed evidence of effectiveness, for example music engagement, visual arts, movement based creative expressions, expressive writing (Bygren et al, 2009; RSPH, 2013). The Artroom activities were no different than these forms of participatory arts. A range of Artroom activities have been discussed in the background section of this report including the model of delivery in results section 8.5 (table 12). Although the Artroom activities included a wide variety of activities which offered a reasonable choice to the participants, there were particular challenges among Artroom artists to describe what model of delivery they were following. On one side, flexibility and widely open structure in offering the arts activities provides choice and holistic approach, but on the other side a well developed and cleartly described model could offer a better approach to support artists in setting up Artroom activities, rather than struggling with what could be offered to participants on the day. Artists advocated a participatory approach in delivering Artroom to engage with patients, visitors and staff, a main priority of the Artroom delivery model. However, the structured model of delivery could also be used as a marketing tool to influence NHS staff and management. Such an approach or model could also be developed with flexible delivery options which could be adopted when required. The current study could not find any formal model or framework which is being used by all the GHAT Artists. In the absence of such a model it could be difficult for GHAT to advocate for funds and influence donors or some of the NHS managers to implement Artroom.

9.3.2 Quality of life

This study showed a clear improvement in the quality of life through a number of positive outcomes observed during in-depth-interviews and survey with patients, Artroom artists and NHS staff. The Artroom refined CMOs 1&2 and 3&4 in table 7 in result section 8 showed a series of outcomes which provide evidence of improved self-esteem, confidence and better, more trusting relationships between patients and NHS staff due to Artroom activities. There was also evidence of less or no agitation and aggression, improved physical strength, cognitive behaviour and sense of purpose, and a reduction in the stress which is usually observed due to illness and the hospital environment. These positive outcomes have been linked to improved quality of life in other studies (Bygren et al, 2009; Pot et al, 2010; Creech et al, 2013). However, there was a different view when it came to recovery in palliative care; for example patients and NHS staff at Roxburgh House understood that Artroom and participatory arts might not offer a sense of recovery, but believed Artroom may have contributed to short term quality of life by engaging terminally ill patients in a positive social environment using Arts as a vehicle. The current study provides evidence that there is appreciation of the short term better quality of life and positive thinking among most patients.

From an NHS staff perspective there were also positive outcomes which may improve staff workplace related quality of life. The refined CMOs in table 9 provides evidence of positive outcomes in terms of better staff and patient relationships and a friendly environment, less

stress among nursing staff, some free time and breathing space, improved confidence and mutual trust. In addition to patient and staff quality of life, family members and visitors were also feeling better and more satisfied with the hospital environment as they could relate this to patient's satisfaction and social engagement through Artroom. Furthermore, some of the NHS nursing staff recognised Artroom as a therapeutic activity. These outcomes and belief about Artroom activities were vital factors to improved quality of life (Snoke et al, 2015)

The current study showed evidence that the quality of life among patients and staff was improved and positively impacted through Artroom interventions. This took place through the mechanisms of

- improving and enhancing patients and family members' satisfaction, happiness, enjoyment, distraction from clinical environment and social inclusion
- improving mutual trust, self-esteem, motivation, confidence, control and better relationship
- providing calming environment, reduced level of stress and relaxation
- offering person centred care to patients and high quality social care support and treatment beyond the clinical environment.

The evidence from this study confirms previous evidence which showed that an improvement in quality of life is associated with improvement in physical functioning, general health perception, mobility and cognitive functions, social networking and mental health, which was also related to self-esteem, confidence and control in this study (Bygren et al, 2009; Pot et al, 2010 ;Creech et al, 2013).

9.3.3 Organisational benefits to NHS

Skilled healthcare staff are valuable assets and maintaining the skill level enables human resource organisations to provide cost effective and efficient services (Christmas, 2008). The main reasons for a high turnover of hospital nursing staff include work pressure and high stress levels (Repar & Patton, 2007). The current study observed positive outcomes among NHS staff in terms of reduced stress levels, freeing up time, a sense of achievement and satisfaction in providing care, better relationships with patients and higher levels of work coordination due to engaging with Artroom. These outcomes could be observed in the refined CMOs 1&2 in table 10. Mahoney et al (2010) argued nurses can transfer the benefits of engaging with Arts to their patients, especially when they feel relaxed, have lower levels of stress and are coping well, along with a sense of achieving better care for their patients. These outcomes are important from a hospital perspective as they offer multiple benefits to organisations in terms of better patient and public compliance, a calm hospital environment, improved safety and improved staff workplace related satisfaction which in turn could lower staff turnover, especially in acute hospital settings. The current study did not focus on cost effectiveness or the health economics side of the Artroom interventions which could provide even more convincing benefits, especially if there was a methodology to measure the value of patient and staff satisfaction level in monetary terms.

9.3.4 Barriers and enablers in hospital settings

There has been a lack of evidence about the factors which create hindrances or barriers in developing participatory art interventions in hospital settings. The current evaluation study sheds light on some of the main barriers, mainly based on the interviews data. Two main barriers identified were: preconceived ideas about art activities depending on individuals or patients' previous experience, which may lead to misinterpretation of participatory art benefits and negative beliefs of NHS senior level staff about the arts and Artroom. In addition, lack of encouragement by some NHS staff and active engagement of hospital staff could hamper progress to engage with patients and miss out the social interaction. The refined CMOs 1&2 in table 11 provided a detailed account of barriers and enablers in developing Artroom interventions in hospital settings. Overcoming these barriers could support NHS nursing and other clinical staff to gain the benefits of the Arts as showed in the evidence of effectiveness (Manhoney et al, (2010). The improved factors will not only improve the overall hospital environment, but could impact on cost savings and patient satisfaction. By promoting and participating the Artroom activities, hospital clinical staff and management are contributing towards person centred care, one of the overarching aim of the Healthcare Quality Strategy for Scotland (Scottish Govt. 2010) , a National Clinical Strategy (Scottish Govt. 2016) and NHS Grampian Clinical Strategy (2016-2021).

9.4 Challenges, strengths and limitations of the study

9.4.1 CMO overlapping issues in the development of refined CMOs

In the current study, **t**here were a number of CMO theories which overlapped in terms of both mechanisms and outcomes. In some cases it was not possible to show only one mechanism and linked outcomes because of the possible influence of multiple mechanisms and even contexts (Byng et al, 2005). The fact that an outcome could be achieved by a range of contextual influencing factors and mechanisms is sometimes complicated and it was difficult to make explicit links to outcomes; however the CMO refinement process tried to make the links as clear as possible, although that was not possible in all cases because an outcome could be achieved by different methods. It is also important to show and present all the probable mechanisms through which an outcome was achieved or could be achieved. In more explicit terms, patient confidence and self esteem can be improved by engaging them in a social engagement or music activities without doing any other specific Art activities (Bygren et al, 2009; Creech et al, 2013), but some participants may not be happy and require more meaningful Artroom activities such as drawing, painting, poetry and human social interaction. However, the context and the type of target audience directs which mechanism of behaviour modification is suitable, effective, efficient, ethical, acceptable and sustainable. The complexity of multiple contexts and mechanisms remained an unresolved issue which has been discussed by other authors elsewhere (Pawson and Tilley, 1997; Byng et al, 2005)

9.4.2 Strengths and limitations of the study

Strengths

1. The evaluation study used a mixed-method approach to validate Artroom information and Artroom initial CMO theories. Although the majority of the Artroom refined CMO

theories were confirmed by using qualitative in-depth interview data, overall multiple data sources that included in-depth qualitative interviews, survey, observations, and project papers including various Artroom evaluation reports were also used to refine CMO theories.

2. SRE is based on the methodology of 'realist' philosophy of science and links back to natural sciences. The SRE framework translates the social sciences' conceptualisations into the world of health policy and practice (Bhaskar, 2008; Pawson and Tilley, 1997). This is a view which brings these concepts to human endeavours using natural science laws in an explicit way. In doing so, SRE focuses on theory and the scope for generalisation and replication that comes from giving more attention to explanatory theory, where it is possible to generalise outcomes with a degree of confidence.
3. This evaluation study is based on an initial literature review and initial programme theory developed through relevant literature assessment and focussed on different aspects of the Artroom programme. The initial literature review and the Artroom initial CMO theory development process informed the whole process of data collection and theory development and refinement. This systematic process also reduced the risk of unexpected outcomes, especially in the process of qualitative data gathering.

4. The framework used in this evaluation is based on a generative process of causation rather than a successionist approach (Pawson, 2006). The generative process means that the Artroom's stakeholders' internal powers, liabilities and influences were considered as well as external influences.

5. One of the major strengths of SRE is that it moves away from an over-reliance on quantitative methods. By working on the influencing factors and contexts in which they are triggered to happen, it is possible to identify specific conditions or outcomes that are unsuitable. For example, if, despite rigorous efforts, artists are not able to engage most patients then we might need to avoid negative triggers such as lack of coordination and communication between NHS staff and GHAT Artroom Artists.

Limitations

1. The SRE is an innovative and holistic theoretical approach, but there are complications in translating this into practical research. The confusion between contexts and mechanisms can be overwhelming and require more time to brainstorm and explore more evidence (Byng et al 2005). In some Artroom thematic areas, there was lack of evidence to refine theories due to lack of information on the theme within the Artroom project. For example there was lack of information initially to develop a CMO configuration for supporting and hindering factors from the Artroom initial programme theory.
2. Applying SRE to more complex and fluid systems, such as recovery and its meaning towards the end of life, was a very challenging concept to explore and refine CMO theories especially when lack of evidence was an issue. There were difficulties in terms of identifying and defining clearly the thematic contexts and mechanisms. In some cases there were multiple contexts and mechanisms which acted as triggering factors. Similarly there were outcomes which could be linked to multiple

mechanisms and contexts. There was no solution to this difficulty and it may continue to frustrate practitioners in the public health field (Byng et al, 2005).

3. It is better to apply SRE to small scale projects and less complex areas, especially if time is a constraint, because SRE is labour intensive and time-consuming and could be complicated for large scale interventions.
4. SRE is a demanding framework; it is tedious and cumbersome as every step must be linked to another step. There are various aspects which require thorough understanding and interpretation and are subject to evaluators' analytical vision, knowledge, and imagination to develop clear understanding and appropriate Arts links. It requires sustained thinking and imagination to work through programme theories, to define expected outcomes patterns, and to establish how and where to get information to test them. The whole process is not easy; it requires advanced theoretical understanding and the ability to handle multi-method data analysis and interpretation.

10.0 Recommendations and Conclusions

10.1 Recommendations

1. A model of Artroom delivery should be clearly defined; it might not be applicable in all situations, but it could offer corporate benefits to promote the Artroom and attract wider stakeholders. The model could still be flexible based on the basic participatory principles of the Artroom delivery.
2. To improve NHS staff understanding of the valuable contribution that Artroom and participatory arts could play in improving the hospital environment and benefit patients, GHAT should engage with senior and mid level NHS management, through for example evidence of effectiveness talks, presentations and/or fact sheets.
3. Senior level clinicians should be engaged in the Artroom design if not the specific delivery process. Their direct engagement could functionally support junior clinical staff to enhance and to support the programme. It will also help to overcome the prevalent negative perceptions about arts and the belief that the arts are a specialised form of activity which is not helpful to patients and visitors.
4. GHAT should consider how best to offer physical access to patients as there has been indication of challenges to some patients, especially if the wards are too far from the Artroom venue. The Artroom venue should be organised in partnership with hospital staff, patients and the management so that wider views are considered.
5. The Artroom service should be expanded to cover more hospitals and also increase the number of hours per week. There should be a minimum of two sessions of two hours each, especially where staff and patients are more willing to engage in Artroom activities.
6. A clear communication strategy should be in place to smoothly run and raise awareness about the Artroom. Lack of coordination between GHAT, Artists and NHS healthcare teams could confuse and discourage patients and visitors from participating. Such a strategy should consider patients as priority stakeholders in the design, delivery and evaluation of the Artroom.
7. There must be attention to the lack of designated place in some hospitals to run Artroom activities. GHAT should negotiate the availability of venues for Artroom activities on a long-term basis rather than as temporary arrangements.

8. GHAT should consider setting up an Artroom steering group by including wider stakeholders including NHS staff, GHAT Artists, GHAT management representatives, patients and visitors. The steering group could have a clear role and remit to support the overall ethos of Artroom, funding, partnerships and collaborations.
9. Further Artroom research is recommended, especially to define and measure the value of positive patient outcomes in terms of potential monetary value. For example, compare the cost of an aggressive/agitated patient in terms of staff hours, increased stress levels and breakdown in staff-patient-family member relationships with Artroom activity costs.

10.2 Conclusions

Because of the limited survey and in-depth interviews sample, a measured approach is required when generalising the results of the study. We believe, however, that the strong methodological framework in terms of SRE offered an opportunity to achieve outcomes which could be linked to specific mechanisms and outcomes. Also describing what works, for whom, how, and in what circumstances could have generalisable propositions.

The current study has shown a positive impact of the Artroom in improving staff and patient confidence, control, sense of purpose and achievement, improved relationship between NHS clinical staff and patients and a series of benefits to staff, hospitals and the family members. Even in palliative care, patients and NHS staff believed Artroom may have contributed to improved short term quality of life, by engaging terminally ill patients in a positive social environment using Arts as a vehicle to connect and relate Arts to life. Artroom supports the clinical and biomedical approach by focusing on holistic and person centred approaches, rather than sickness and symptoms.

It is difficult to conclude to how much what extent the Artroom programme has contributed to improving the quality of life as this is it's first formal evaluation. Evidence around participatory arts also lacks robustness, as it is hard to pin down the health economics benefits of the interventions (GCPH 2014). However, the current evaluation has provided some outcomes from patients, staff and hospital perspectives which could help set directions for the programme and should raise the confidence of the GHAT management team and donor organisations.

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Annexes

Attached in a separate file