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Developing a framework for arts in health programs targeting individuals with chronic pain: a mixed-methods study of practitioners

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Abstract

Objectives: Chronic pain is a leading cause of morbidity and disability across the world. Cultural engagement may be a valuable tool in addressing the social disconnection that often accompanies chronic pain. This study sought to develop a framework for arts in health programs targeting individuals with chronic pain.

Study design: Sequential explanatory mixed-methods study.

Methods: Web-based, cross-sectional survey sent to arts and cultural professionals to assess their experience with arts in health programming. Semi-structured interviews conducted with a sample of survey respondents to explore their perspectives on targeted arts in health programming for individuals with chronic pain.

Results: Between October 2019 and January 2020, 208 surveys were completed by arts and cultural professionals. One hundred and twenty (58%) of the respondents indicated that they currently run an arts in health or museums in health program. Among these 120 respondents,

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Ethical approval
The University of California, Davis Institutional Review Board approved this study.

Competing interests
None declared.

Appendix A. Supplementary data
Supplementary data to this article can be found online at https://doi.org/10.1016/j.puhe.2021.05.032.

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52 (43%) targeted older adults, 50 (42%) targeted individuals with mental health concerns, and 18 (15%) targeted individuals living with pain. Improving well-being (101 [84%]) and reducing social isolation (90 [75%]) were the most common intended program outcomes, while improving pain was the least common outcome (26 [22%]). Fifteen survey respondents were interviewed. Interviewees identified four interdependent themes regarding best practices for arts in health programs pertaining to (1) program content and structure, (2) program facilitation, (3) partnerships, and (4) programs for individuals with chronic pain.

Conclusions: The cultural sector can support chronic pain prevention and treatment efforts through the development of specialized programs. This study provides a framework for developing arts in health programs that support individuals living with chronic pain.

Keywords

Arts; Museums; Pain; Public health; Mixed-methods

Introduction

Scholars have long held that the arts can serve as agents of human health and well-being,[1] but museums and arts organizations have traditionally remained outside of the public health sector.[2,3] A substantial body of scientific literature developed in the 21st century supports a role for the arts in promoting health as well as preventing, managing, and treating illness across the life span and body politic.[4] Despite this evidence and a number of innovative 'arts on prescription' program models,[5,6] an awareness gap exists regarding the arts' public health potential in general[4] and their use to address chronic pain in particular.[7] In this study, we addressed this gap in knowledge by surveying and interviewing museum, heritage, and arts professionals who direct programs intended to improve health. Survey and interview data were then used to develop a framework for arts in health programs that target individuals with chronic pain. Chronic pain was chosen as the study focus because it is underresearched in relation to the wider field of arts in health, yet is a major public health challenge that may benefit from arts-related interventions.[7–10]

Chronic pain is a leading cause of morbidity and disability across the world,[11] affecting between 35.0% and 51.3% of the population in the United Kingdom.[12] In the United States, chronic pain prevalence estimates range from 50 million[13] to 100 million adults.[14] Pain is a complex biopsychosocial phenomenon,[15–19] defined by the International Association for the Study of Pain (IASP) as 'an unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage.'[20] The IASP definition further notes that pain is 'always a personal experience that is influenced to varying degrees by biological, psychological, and social factors.'[20] For example, alleviating social disconnection has been demonstrated to reduce pain,[21–23] yet interventions targeting social disconnection in individuals with chronic pain are uncommon.[15–19]

Arts organizations may be valuable public health partners in addressing the social disconnection that accompanies chronic pain,[1,4,5,7] and there is evidence that cultural engagement, including museum attendance, is protective against the development of chronic pain.[24] The National Endowment for the Arts in the United States published a literature

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review on the arts, pain management, and substance use disorder in 2020.[7] The review identified 79 studies on the topic of pain management, 72 of which evaluated a music-based intervention. Target populations included individuals with postoperative pain (n = 46; 58%), individuals with chronic pain (n = 25; 32%), and individuals with cancer pain (n = 8; 10%). The review suggests that future research efforts should include, but not be limited to, studies that examine the impact of arts in health programs on individuals living with chronic pain and on the social aspects of pain, particularly in non-hospital settings and that do not include music. Museums and arts organizations can facilitate positive individual and relational processes within an aesthetically and emotionally enriched context that mitigate social disconnection[3] and the burden of chronic pain.[9] To do so, arts organizations must be accessible and support participants longitudinally to engage both socially and with novel arts objects and experiences.[3,10]

An example of arts in health programs targeting individuals with chronic pain conducted in a non-hospital setting that does not include music is Art Rx. The Integrative Pain Management Program at the University of California, Davis, developed Art Rx in collaboration with the Crocker Art Museum in Sacramento, California, in 2014. Art Rx provides free, monthly virtual or in-person tours of the museum for any individual with chronic pain and for their family members and/or friends. Art Rx tours focus on participant experience and dialogue rather than the art object and its history to facilitate inclusivity. Inclusivity is further emphasized by high-lighting that the museum is a public organization, validating all perspectives on the art objects discussed, and providing light-weight stools for all participants to enhance comfort and facilitate accessibility. The art objects viewed change each tour to appeal to the broadest audience possible. A detailed program description for individuals wishing to develop a similar program has been published elsewhere.[10] In this study, we surveyed and interviewed individuals running arts in health programs to better understand the potential role these programs could play in benefiting individuals with chronic pain.

Methods

Research design

This study used a sequential explanatory mixed-methods design in which quantitative and then qualitative data are collected and analyzed in two consecutive phases within one study.[25] The qualitative data, derived from participant interviews, were prioritized and used to clarify and elaborate on the project's quantitative survey findings.[25] Table 1. Mixed-methods visual model provides a schematic depiction of the research activities undertaken in this study created using the ten rules for drawing visual models for mixed-methods designs developed by Ivankova et al.[25]

Survey design and participants

A multidisciplinary team comprised of experts in arts in health research, pain management, integrative medicine, clinical trial design, and qualitative research methodology developed a 14-item Qualtrics survey (Appendix 1. Survey). A link to the survey was initially sent to arts and cultural professionals and networks in the US and UK including, but not

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limited to, the Royal Society for Public Health Special Interest Group on Arts and Health; Culture, Health and Wellbeing Alliance; The National Organization for Arts in Health; and University of Florida, Center for Arts in Medicine. Initial recipients were requested to share the survey with colleagues and via social media. Survey questions assessed if a respondent had an arts in health program, as well as the target audience and intended outcome for that program. Respondents with programming intended to address chronic pain, loneliness, or social isolation were asked to indicate what they found to be the most and least effective components of that programming. In addition, respondents were asked to list their method(s) of evaluation and to indicate if they would be willing to be interviewed.

Interview design and participants

The research team created a semi-structured interview guide and used it to explore arts in health programmers' perspectives on their programming (Appendix 2. Interview Guide).

Individuals who indicated a willingness to be interviewed and any of the following on their surveys met inclusion criteria for an interview: (1) implement an arts in health program for individuals with pain; (2) run an arts in health program intended to improve pain; (3) interested in developing an arts in health program for individuals with chronic pain; (4) unsure if they are interested in developing an arts in health program for individuals with chronic pain; or (5) not interested in developing an arts in health program for individuals with chronic pain. Up to three attempts were made to contact each individual who met the criteria to schedule an interview. Those who agreed were interviewed. This study's broad inclusion criteria were intended to maximize the ability to collect qualitative data regarding arts in health programs for individuals with chronic pain.

Quantitative data collection and analysis

Basic statistics for describing survey responses (e.g., frequencies and percentages) were calculated using StataCorp. 2019. *Stata Statistical Software: Release 16*. College Station, TX: StataCorp LLC.

Qualitative data collection and analysis

A research assistant trained in qualitative methodology conducted all interviews. The semi-structured interview format allowed for coverage of relevant predetermined topics such as program development, initiation, facilitation, content, and sustainability, as well as perceptions of best practices in cultural programming intended to serve individuals with chronic pain, while also allowing for new concepts to emerge.[26] Interviews were audio recorded, transcribed, and then analyzed qualitatively using the software package VERBI Software. *MAXQDA 18*. Software. 2017. maxqda.com.[27]

The first stage in the multistage coding process comprised three researchers using a thematic analysis framework[28] to independently code three interview transcripts. Once the researchers achieved intercoder agreement on the coded segments, they developed a codebook consisting of both a priori and emerging codes, definitions, and examples from the data and used it to independently code the remaining 12 transcripts. To ensure rigor and confirmability of the qualitative findings, researchers met twice weekly for a

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total of 3 h per week while collecting and analyzing data (December 12, 2019–July 30, 2020); total estimated peer debriefing time for this study is 99 h. During these team meetings, researchers compared experiences with data analysis discussing convergence, complementarity, and divergence not only with their own experiences but also through triangulation with the extant literature and data from the interviewees' organizations' websites. These team meetings along with memos that each researcher created for each interview also provided an opportunity for reflexivity.

Results

Quantitative

Over the course of three months (October 30, 2019–January 30, 2020), 208 surveys were completed. One hundred and twenty (58%) respondents indicated that they currently run an arts or museums in health program. The target audiences for these programs were varied. Forty-three percentage of respondents targeted older adults, 42% targeted individuals with mental health concerns, and 15% targeted individuals living with pain. Improving well-being (84%) and reducing social isolation (75%) were the most common intended outcomes respondents gave for their programs, while improving pain (22%) was the least common intended outcome. Respondents indicated that they use a variety of program evaluation methods, including anecdotal (45%), informal (39%), and formal (26%) evaluation techniques. Refer to Table 2, for further details.

Qualitative

Fifteen of the 51 survey respondents who met inclusion criteria were interviewed. Interview participants came from England, Greece, North America, and Scotland. They worked at four different types of arts organizations: museums, non-profit arts spaces, university-affiliated arts spaces, and hospital-based arts spaces. The arts in health programs discussed had been in existence from less than a year to 40 years, with an average of 12 years. Transcript segments were conceptually grouped into four overarching and interdependent themes pertaining to best practices in arts in health programming: (1) program content and structure; (2) program facilitation; (3) partnerships; and (4) arts in health programming for individuals with chronic pain. Quotes from interviews that are representative of these themes are presented in Table 3. All in-text statements within quotation marks additionally comprise original quotes from interviewees.

Program content and structure

Arts in health programs encompass a wide variety of activities. Many programs include art-making activities (e.g. drawing, collage, painting, photography, sculpture, multimedia art, digital art), while others focus on art viewing, object handling, meditation, or some combination of the aforementioned. Many factors influence program content including target audience, group size, funding, facilitator expertise, and program location (e.g. prison, museum, hospital).

In developing program content, interviewees prioritized relevance to target audience, feasibility, and flexibility. Interviewees also noted the importance of flexibility in terms

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of program timing (e.g. time of day, program duration, frequency of sessions, and length of individual sessions) to adapt to partner and participant needs, as well as to the constraints imposed by program location. Frequency of individual sessions for ongoing programs ranged from twice a week to once a month.

Program facilitation

All interviewees identified program facilitation as an essential component of a successful arts in health program. The arts in health programs discussed during interviews were facilitated by individuals with a range of professional backgrounds including, but not limited to, museum professionals, educators, volunteers, artists, art therapists, and other behavioral health professionals (e.g. social workers, clinical psychologists). Interviewees identified several key facilitator characteristics viewed as essential to program success irrespective of professional background: compassion, inclusiveness, flexibility, and specialized training when required for particular populations (e.g. people with dementia). Interviewees indicated that facilitators need to be competent in delivering the program activities (e.g. discussing the museum's collection, art-making techniques, and so on) and meeting the particular needs of the individuals participating in those activities. Interviewees also noted that certain program locations (e.g. a hospital) may require facilitators to have additional training (e.g. infection control).

Partnerships

All arts in health programming discussed by interviewees involved partnerships with non-arts professionals and/or organizations. Characteristics of successful partnerships mentioned by interviewees included shared goals, addressing an identified community need, and the ability to manage the expectations of the partnership. Interviewees described diverse partner types including healthcare organizations or professionals, universities or scholars, social service or advocacy organizations, and art collectives or artists.

Interviewees viewed the specialized expertise of each type of partner as essential to their arts in health programming, including expertise in the following:

- Program facilitation
- Working with the target population
- Informing program content (e.g. in relation to the target population)
- Community outreach (e.g. ability to refer the target population to arts in health programming)
- Program evaluation
- Funding

Arts in health programming for individuals with chronic pain

Although no interviewees were currently running an arts in health program targeting individuals with chronic pain, several indicated an interest in developing such a program. One factor driving interest in developing arts in health programing for individuals with

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chronic pain was the observation that their existing arts in health programs appeared to have a beneficial impact on participant pain. For example, one interviewee described an arts program for children with cancer and noted that it was 'really interesting because the medical staff are telling us that the child's ability to cope with their pain and discomfort increases if there are arts activities to engage with.' Another explanation given for interest in developing an arts in health program for individuals with chronic pain was the observation that 'a high number of people with chronic pain [are already] coming to our programs; there's obviously something about what we're offering that, um, is meeting a need.' One interviewee noted that the healthcare system's inability to serve the needs of individuals with chronic pain created an opportunity for her organization. Another mentioned that a lack of partnerships with the healthcare sector was a barrier to developing an arts in health program for individuals with chronic pain.

Discussion

This mixed-methods study confirmed that arts in health initiatives are quite diverse; they encompass a wide range of activities, draw from every art form (e.g. photography, painting, digital art, dance.), and take place in many different types of settings (e.g. museums, health care centers, non-profit organizations, public spaces). The target populations of arts in health programs are equally varied and include wellness programs for the general population, specialized programs for vulnerable groups, and dedicated programming for individuals with specific emotional and/or physical conditions, as well as for family members, friends, and/or caregivers of those individuals.

Any model for arts in health programming must accommodate these varied and individualized approaches to program development and implementation. An overly prescriptive model would limit creativity and risk irrelevance in certain contexts, while a model comprising only general suggestions risks not having enough specific guidance to be useful. Creating a model that could be applicable across a diverse set of programs, partnerships, and practices is challenging, and this study's size and design limit the generalizability of its findings. Therefore, the framework provided here is intended as an adaptable scaffolding framework, which future research efforts can build upon, refine, and revise. As the health and cultural sectors continue to engage with one another in service of the millions of people around the world living with chronic pain, we anticipate and encourage adaptation of this framework to ensure comprehensiveness, relevancy, and usability.

In addition, while there is a growing appreciation for the social threats people with chronic pain face, particularly in the context of COVID-19,[29] a robust understanding of the biopsychosocial causes and effects of these threats is limited, which hinders the precision of any proposed model. Notwithstanding this, our study's findings suggest several best practices for use in arts in health programming, which are illustrated in Fig. 1., and described below:

- Need-based program development

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Programming that addresses an identified and prioritized community need helps to assure its relevance and sustainability. In the case of pain management, target outcomes could include social connection, positive coping strategies, and decreased pain unpleasantness.

- Partnership

  Once a need has been identified, it is important for the arts organization to reflect on how its resources can be used to address that need, as well as what outside resources and partnerships are required to optimize program impact.

- Flexibility and quality improvement

  Interviewees repeatedly noted the importance of adapting to both participant and partner feedback in terms of program content, structure, and facilitation.

Finally, one interviewee underscored the importance of consistency, placing its importance on equal footing with program content and facilitation: 'What we heard from people last term was that it is not necessarily what they learned from their session, it is the fact that they can come to the session again next week and always.' This comment speaks to the need for organizations to consider the sustainability of programs and the ethical responsibilities inherent in working with vulnerable audiences.

Arts in health programs can be conceptualized as complex interventions,[30] in so far as they:

- Have multiple and interacting components
- Require a number of behaviors by those delivering and receiving the program
- Target a variety of groups
- Have variability in outcomes
- Allow for flexibility and tailoring of the program

The ability to develop, adapt, and evaluate complex programs requires a thorough understanding of how these programs are implemented.[30] Future research should include detailed descriptions of the arts in health programs being evaluated as many review articles cite the lack of clear program descriptions as a weakness.[31] In 2014, an international group of experts and stake-holders developed the 12-item Template for Intervention Description and Replication (TIDieR) checklist and guide[32] to improve reporting and evaluation of interventions. Individuals creating arts in health programs to address chronic pain may wish to develop TIDieR guides for their programs to aid in their implementation, replication, and evaluation.[33]

Chronic pain is a major global public health problem[11] that places individuals at increased risk of loneliness, social isolation, and reduced social role functioning.[34–37] These adverse social factors have negative implications for the individual over time.[38–40] Arts in health programs and social prescribing models more generally may have a role to play in preventing and managing the deleterious effects of chronic pain.[8–10] Previous work has shown that both arts in health professionals and healthcare providers working with individuals with chronic pain may be interested in exploring mutually beneficial

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collaborative programming,[10,41] a finding confirmed by this study. Despite this interest, few arts in health programs targeting individuals with chronic pain exist. This study demonstrates that there is considerable potential for dedicated arts programs to support the complex biopsychosocial challenges associated with chronic pain; the framework we describe herein provides the basis for developing a new genre of arts in health programming that can serve as a complex non-clinical pain management intervention.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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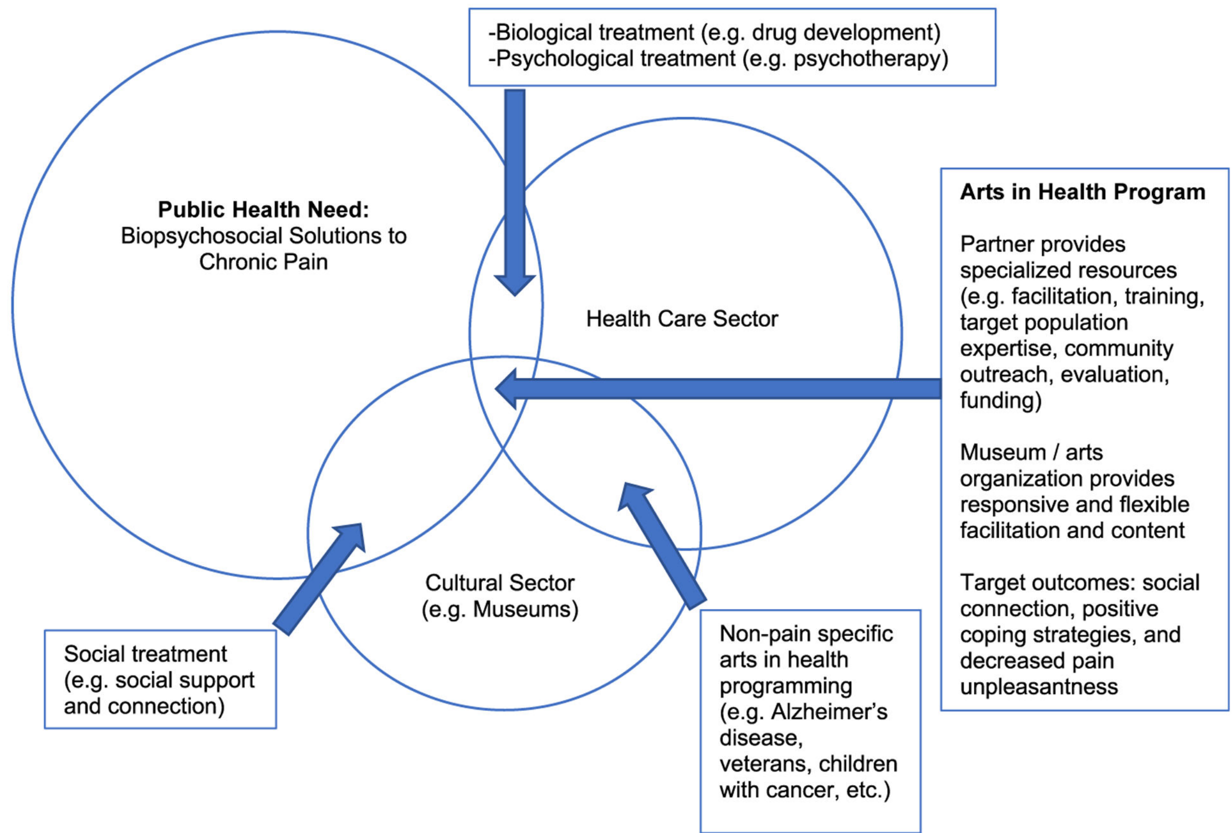

Fig. 1.
Framework for arts in health programs targeting individuals with chronic pain.

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Table 1

Mixed-methods visual model.

Phase	Procedure	Product
Quantitative Data Collection ↓	Cross-sectional Web-based Survey (n=208)	Numeric Data
Quantitative Data Analysis ↓	Stata/MP Quantitative Data Analysis Software	Descriptive Statistics • Frequency • Percentages • Missing Data
Connecting Quantitative and Qualitative Phases ↓	Refine Semi-structured Interview Guide; Selection of Interviewees	Final Interview Protocol; Identified 15 Individuals to Interview
QUALITATIVE* Data Collection ↓	Individual Semi-structured Interviews with 15 Participants	Data • Audio-recorded Interviews • Interview Transcripts
QUALITITIVE* Data Analysis ↓	Coding and Thematic Analysis MAXQDA v.2018 Qualitative Data Analysis Software	Codebook Codes and Themes
Integration of Quantitative and Qualitative Results	Interpretation and Explanation of the Quantitative and Qualitative Results	Discussion of Outcomes; Best Practice Model; Implications for Future Research

* Capitalization indicates the priority given to the qualitative data in this study

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Table 2

Survey results.

	N
Total sample	208 (100%)
Currently run an arts in health or museums in health program?	
Yes	120 (58%)
No	88 (42%)
	N[a]
	120 (100%)
Audience targeted [b]	
People with chronic pain	18 (15%)
Older adults	52 (43%)
People with dementia	43 (36%)
People with mental health concerns	50 (42%)
Stroke survivors	12 (10%)
Other	50 (42%)
For intended outcome [b]	
Program designed to improve:	
Pain	26 (22%)
Loneliness	77 (64%)
Social isolation	90 (75%)
General sense of well-being	101 (84%)
Mood	82 (68%)
Caregiver burnout	33 (28%)
Stress/anxiety	76 (63%)
Other	33 (28%)
Do you have a program for individuals with chronic pain? [c]	
Yes	14 (12%)
No	87 (73%)
Missing	19 (16%)
Interest in developing a program for individuals with chronic pain? [c]	
Yes	39 (33%)
No	3 (3%)
Unsure	53 (44%)
Missing	25 (21%)
Do you have a program to address loneliness and/or social isolation? [c]	
Yes	75 (63%)
No	19 (16%)
Missing	26 (22%)
Methods used to evaluate your programming for loneliness, social isolation, and/or chronic pain? [b]	

Formal evaluation	31 (26%)
Informal evaluation	47 (39%)
Anecdotal feedback	54 (45%)
None	7 (6%)
Other	11 (9%)
Willing to be interviewed	
Yes	55 (46%)
No	19 (16%)
Missing	46 (38%)

[a]Subsequent percentages based on the 120 survey respondents who answered 'Yes' to the question, 'Do you currently run an arts in health or museums in health program?; total percentages may not equal 100% due to rounding.

[b]Multiple responses allowed; total percentages do not equal 100%.

[c]Percentages do not equal 100 due to rounding.

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Table 3

Selected quotes representative of interview themes.

Theme	Quote
Program content	
	Depending on where we're going in the hospital, we have some restrictions of what materials we can use.
	We're very flexible in terms of what and how long the visit is, what galleries we look at and what the activity is based on, the physical and cognitive needs [of participants], what the group wants to look at or themes that they're interested in; it's very flexible in that sense. For the Alzheimer's and dementia [groups] they are 60-min sessions, but the art making is only about 40 min of that because there's a certain settling in time and a certain settling out [time] … For our formerly homeless veterans, it's 90-min sessions.
	Usually we end up working with patients for anywhere from, you know, 10 min to half an hour, 45 min.
	We want to warm them up to the environment, to find out do people have previous experience with the museum, what have they done in the past. Then we can move up the escalator to another floor, go to the gallery, spend about 25 min there, and then back to the studio for the rest of the time.
Program facilitation	
	Not being patronizing; treating people with dignity, being friendly.
	Compassion and a certain amount of humor, probably playfulness and obviously resilience.
	Asking something that anybody can have an opinion on is very helpful [in program facilitation].

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Theme	Quote
	A soft clinical approach where we're not focused on the diagnosis. What we're focused on is the wellbeing objectives of the participants that day.
	If we're working with Alzheimer's and dementia groups, we want people that have worked with people that have those kinds of limitations.
	All of our instructors have a lot of experience at this point in being flexible and making it work for the patient.
	Working in a hospital you need to be so adaptable and you cannot go in and think, 'this is what I'm going to do.' You have to be completely open, and incredibly flexible.
Partnerships	I would feel like a partner would have to come and say, this is something we really feel that we need and the conversation would have to be had around that.
	We spend a lot of time like developing what, what do our partners want out of the program and, and what can we deliver on out of what their desires are.
	Our biggest challenge across the entirety of health and wellbeing [programming] is connecting to the clinical setting or the healthcare setting because those professionals are, are under such extreme pressure.
Arts programming for people with pain	Our programming does not purport to address chronic pain directly; however, anecdotally, the therapeutic nature of the activities often has the side effect of temporarily lessening the effects of chronic pain, either through distraction or by helping participants find creative ways to address their pain or emotions. Addressing pain through artistic expression tends to make the participant view themselves as productive rather than destructive or defeatist.

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Theme	Quote
	We'd be filling a gap that not many people are. Yeah. The people are struggling to access anything to help them with [chronic pain]. Things have been changing in research to understand the benefits of arts and health … the more I have been understanding the evidence of how best the arts and health can be used the more I've been talking to people who are specifically working with individuals with chronic pain and what I have found is mostly those people have been working maybe more with music and not so much the visual arts … so I've been particularly interested in where we could develop that [visual arts programming] for individuals with chronic pain. It's not so much that I would hesitate to do something for that particular audience [individuals with chronic pain], but we're really led by what our partners need.
	I don't have an identified need right now and I don't have the funds right now.
	It's also a field I'm not personally knowledgeable about … it doesn't mean that we wouldn't be up for it, it's just, I'm not sure we've got the skills.
	It's a bit less of a fit, in that chronic pain is more, more physical than mental.
	There may be people on our program already that suffer from chronic pain … but I think one of the most powerful things about our program is, as I say, we don't label people when they sign up.