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## The Benefits of Recreation for the Recovery and Social Inclusion of Individuals with Mental Illness: An Integrative Review

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### ABSTRACT

Previous research has shown the physical health benefits of physical activity for individuals with mental health challenges to their recovery, including reduced symptoms, weight reduction, and improved cardiovascular health. The focus of this previous research has excluded an exploration of the benefits of all types of recreation (including physical activity, creative pursuits, and social recreation) and the possibility of these benefits supporting broader recovery goals, including social inclusion. Through an integrative review and critical appraisal of existing literature, we outline the benefits, barriers to participation, and characteristics of successful programs of a range of community-based recreation. Results included 35 papers and indicate that physical, social and creative community recreation can contribute to the recovery and social inclusion of individuals with mental health challenges. Additionally, inclusive recreation environments set the stage for cultivating friendships if staff is properly trained on supporting camaraderie among participants and facilitating communication with groups they lead.

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community recreation;  
Mental Illness; recovery;  
social inclusion

## Introduction

Based on the underlying principles of hope, empowerment, choice, and self-determination, the recovery-oriented approach has gained in popularity for use in the development, provision, and evaluation of services and resources for people with mental health problems (Tondora, Miller, Slade, & Davidson, 2014). Interest in the recovery-oriented approach is paralleled by the positive psychology movement, and both approaches focus on personal fulfillment, meaningful engagement, and overall well-being rather than remission of symptoms (Resnick & Rosenheck, 2006). Specifically, Moran and Nemec (2013) outline hedonic (i.e., understanding of happiness and pleasure attainment) and eudaimonic (i.e., discovery of meaning and self-realization) approaches as contributing to a meaningful and fulfilling life. These theoretical frameworks can provide a lens for understanding how recreation activities can contribute to recovery for individuals with mental illness as the leisure literature supports a wide range of recovery-oriented benefits to meaningful engagement, including improved overall health, physical functioning, and quality of life (Iwasaki, Coyle, & Shank,

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2010). Mental health services are guided by recovery frameworks, and it is increasingly recognized that, in addition to focusing on individuals, these services must also attend to issues of social justice and social inclusion (Davidson, Tondora, Lawless, O'Connell, & Rowe, 2009). This includes cultivating opportunities for recovery to be supported in communities and with others.

There is growing evidence to suggest that spending time in community recreation programs and spaces promotes recovery (i.e., a nonlinear journey to wellbeing) and social inclusion (i.e., community integration) in individuals with mental illnesses. Much of this evidence has accumulated in the past 10 years and, though largely unsynthesized, suggests that a variety of community recreation types (e.g., physical recreation and activity/exercise, social recreation, and creative pursuits) may improve physical health (Penedo & Dahn, 2005; Sylvia et al., 2013) and reduce symptoms associated with mental illness (Conn, 2010a, 2010b; Iwasaki, Coyle, & Shank, 2010).

Scientific investigation to date has primarily focused on defining the physical health and psychological benefits of participation in organized physical recreation and components of this evidence have been synthesized (e.g., McDevitt et al., 2006; Penedo & Dahn, 2005; Street et al., 2007; Sylvia et al., 2013). Studies have described a variety of benefits to physical recreation including reduced body weight (Bartels et al., 2013), improved cardiovascular health (McDevitt et al., 2006), increased energy (Street et al., 2007), improved sense of belonging and sense of community (Eime, Young, Harvey, Charity, & Payne, 2013), and reduced symptoms associated with mental illness (Conn, 2010a, 2010b). Programs proven to improve the physical health of persons with mental illness are of significant importance given the fact that these individuals often have inactive lifestyles and are therefore more likely to be overweight, and are at greater risk than the general population for developing chronic conditions such as hypertension, diabetes and cardiovascular disease (Bonsaksen & Lerdal, 2012).

In addition to study of the physical and psychological benefits of physical recreation there is considerable interest in understanding the barriers and facilitators to participation in physical recreation among persons with mental illness (e.g., Carless & Douglas, 2012; Happell, Platania-Phung, & Scott, 2011; McNeill, Kreuter, & Subramanian, 2006). Internal barriers (i.e., those arising within a person) include symptoms, thoughts, feelings, and perceptions that may interfere with participation (Carter-Morris & Faulkner, 2003). For example, people with mental illnesses often experience depression, fatigue, or crowd-induced anxiety, making it difficult for them to participate in community-based activities (Craig & Pieris, 2006; Roberts & Bailey, 2011). Mitigating these internal barriers is the domain of health care professionals with specialized training in this domain; however, external barriers are perceived within the environment and are therefore of particular importance to leisure scholars and recreation practitioners who are charged with the responsibility of creating accessible and inclusive community spaces (McNeill et al., 2006). These environmental barriers may include a lack of flexible alternatives (e.g., activities at convenient times, at appropriate levels, and at convenient locations), limited social supports/companions, lack of finances (Smyth, Harries, & Dorer, 2011), and perceived stigma and discrimination in recreation spaces (De Herdt et al., 2013; Iwasaki, Coyle, Shank, Messina, & Porter, 2013).

In addition to physical recreation, there is a significant body of scientific literature describing the capacity for other types of community recreation (e.g., social and creative-based initiatives) to similarly affect psychological recovery and social inclusion in persons living with mental illnesses. Iwasaki and colleagues suggest that recovery may be “strengthened in persons with serious mental illness if efforts to promote active living include *enjoyable, expressive, and meaningful leisure experiences* [Italics added]” (Iwasaki et al., 2014, p. 149), providing

support for further investigating hedonic and eudaimonic approaches. Beneficial community recreation programs are described as spaces where the person is not identified as a patient, is able to engage with supportive others, and has opportunities for participating in personally meaningful activities (Sells et al., 2006); some research suggests that these welcoming and inclusive environments are the first step towards developing personally meaningful relationships which influence social inclusion (Schleien, Green, & Stone, 2003).

The benefits of these recreation activities include reduced symptoms of mental illness (Dingle, Brander, Ballantyne, & Baker, 2013; Iwasaki et al., 2014; Iwasaki et al., 2010), social connections and support (Hebblethwaite & Pedlar, 2005), increased sense of belonging (Iwasaki et al., 2014), and social inclusion (Donnelly & Coakley, 2002). Unlike the physical recreation literature, however, this literature, and that pertaining to perceived barriers and facilitators, has not been formally synthesized. Furthermore, attributes of community recreation programs that promote recovery remain unclear.

In summary, there is an emerging literature to suggest that community based creative and social recreation may promote recovery and social inclusion among persons with mental illness (Iwasaki et al., 2014; Iwasaki et al., 2010). Unlike the physical recreation literature this literature has not been synthesized, making it difficult to draw conclusions about effective approaches and areas in need of research (Levac, Colquhoun, & O'Brien, 2010). Therefore, an exploration of the benefits to participation and the characteristics of community-based recreation initiatives that are pleasurable and meaningful and that facilitate recovery and social inclusion is necessary.

An integrative review is a helpful tool to evaluate and integrate this existing empirical research. The method allows for the clarification of concepts and gives direction for future research within a given area, differing from systematic reviews in that it permits the integration of knowledge derived using diverse methodologies (Whittemore & Knafl, 2005). Through an integrative review, this article seeks to synthesize current empirical literature, and present and describe the benefits, barriers, and facilitators to participation in community based recreation believed to promote recovery and social inclusion among persons with mental illness.

## Methods

Through an integrative review, this article synthesizes current research and presents the benefits, barriers, and facilitators to participation in community-based recreation believed to promote recovery and social inclusion among persons with mental illnesses. It also explores key features of successful programs. Whittemore and Knafl (2005) describe the integrative review process in five steps: 1) a clear identification of the problem that the review is addressing; 2) articulating well defined parameters for the literature search; 3) evaluation of the methodological quality of the literature through a critical appraisal; 4) data analysis of the primary studies, including coding and making a summative conclusion based on the analysis; and 5) data display, where the results are presented. Our approach to each of these five steps is described below.

### *Identification of the research problem*

Research investigating the ability of community-based recreation to influence recovery and social inclusion for people with mental illnesses has not been synthesized. Specifically, a synthesis of the psychosocial benefits of community recreation, barriers to participation, and the

program characteristics that participants view as important to creating welcoming and inclusive community recreation environments is lacking.

### **Literature search**

The search terms were developed by a core group of research team members who are working in recreation and mental health to best reflect our research questions. We developed the inclusion and exclusion criteria with community recreation providers in mind. For example, we excluded interventions that were primarily based in therapy, where the provider needed to have certification to provide the program, since this would exclude many recreation workers, our target population. Additionally, although comorbidities are often associated with mental illness, such as dementia or traumatic brain injury, we needed to ensure a search criterion that focused more succinctly on our target population of individuals with mental illness. With the help of a reference librarian the search terms were developed into a search protocol (see Appendix A). The authors have previously published randomized control trials and systematic reviews, and have experience in the appraisal of a variety of qualitative and quantitative designs. To guide the critical appraisal process the authors systematically reviewed articles that were found using the search protocol (See Appendix A) by using the inclusion and exclusion criteria (See Appendix B).

### **Critical appraisal**

The researchers used the 16-item QATSDD quality assessment tool as it is the only tool specifically designed to evaluate diverse research approaches including qualitative, quantitative, and mixed method studies. The QATSDD has been evaluated for validity and reliability (Sirriyeh, Lawton, Gardner, & Armitage, 2012). The tool allows researchers to offer an assessment of the quality and validity of the methods and methodology of the study rather than an assessment of the results or how well the results address gaps in the literature. Each of the 16 items is measured from 0 (not at all) to 3 (completely) with two items solely for quantitative research and two items solely for qualitative research (Sirriyeh et al., 2012). The purpose of the critical appraisal was to provide an overall assessment of the quality of the literature that addressed our research question and be able to make recommendations for future research. To accomplish this aim, two researchers assessed each included article ( $n = 35$ ) for methodological congruency across the criteria. These criteria addressed several factors, for example, the theoretical framework and the fit between the research question and choice of data collection (Sirriyeh et al., 2012). The two researchers then met to discuss the scores that were assigned to each item in order to come to an agreement. This iterative process produced a score for each article on 14 items and allowed the researchers to make an assessment of each article as well as a general assessment of the literature found in the integrative review as a whole.

### **Data analysis**

Each article was uploaded into Nvivo and was coded by the lead author, who has experience with qualitative content analysis. Analysis of the 35 included studies was achieved through coding of themes developed in each qualitative aspect of the studies and the statistically significant results in the quantitative aspect of the studies. As in any meta-assessment of results, there were many decisions that were brought back to the research team. For example, in

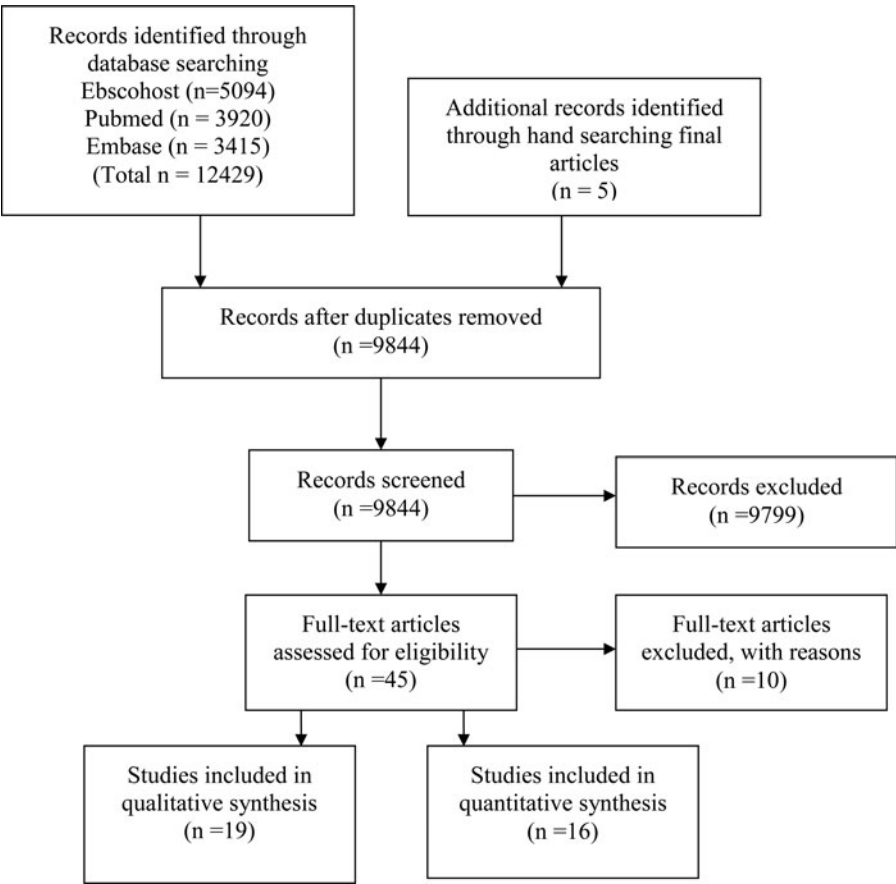
some cases, there were contradictory findings among quantitative and qualitative data. In these cases of contradictory results, we have adhered with Cooper (1998) recommendation of comparing the frequency of significant positive findings against the frequency of significant negative ones. Further, quantitative results that kept the participants as a whole group were privileged over quantitative results that focused on dissecting the participants into categories, for example, by age or living situation. Additionally, some reported results focused on the relationship among quantitative scales that were unrelated to time spent in a recreation program. These are not included in our analyses. For studies involving qualitative data, we focused on the perspective of the participant and not, for example, the perspective of the programmer, as Roberts and Bailey (2011) assert that focusing on service user's perspectives is paramount. Using the above parameters, the lead researcher developed codes based on the research questions using a constant comparison method, where each new code was compared to the previous codes for similarities (Patton, 2002). Codes producing a similar pattern were then grouped together under themes. A second researcher checked the accuracy of the coding by reviewing the codes and the supporting evidence from each article.

## Results

### *Studies retrieved*

Figure 1 is a detailed flow diagram of the systematic literature search. The search identified a total of 12,429 hits from the nine databases searched. This seemed like a large number of articles for an integrative review. Therefore, we double-checked the necessity of this list using Medical Subject Headings (MeSH) terms “mental illness” and “mental health” in Pubmed. This search revealed unique article lists that were relevant to the search, meaning that the large number of included articles was necessary. To clarify, this is a relatively new area of investigation. As such there is substantial variability in the vocabulary used in publication and therefore the search terms are broad and make searching onerous. However, search strategies like the one provided in this study can now be used by others.

With duplicates removed, a review of the titles and abstracts of 9,844 references was independently completed by two researchers based on inclusion/exclusion criteria developed by the research team (see Appendix B). All articles were ranked as “include,” “possibly include,” and “exclude” by the two reviewers. Disagreements and articles ranked as possible inclusions were resolved by the two reviewers discussing the articles and the inclusion criteria. After this process, 45 articles were ranked as “include” based on the inclusion and exclusion criteria (where we sought to include, for example, community based initiatives that were not designated as therapy). As the assessment process thus far only used the title and abstract, in some cases there was insufficient information to exclude the article, for example, absent was information about whether the intervention occurred within the hospital or in a community setting. The inclusion criteria were well established at this time and the first author reviewed the full text of these 45 articles. This reassessment concluded that 10 studies did not meet the inclusion criteria. The final number of included articles was 35, and these reference lists were hand searched for articles (see Figure 1). The predominant reason for exclusion of the 10,009 articles is that the study only included institutions and institutionalized populations rather than community members and community. A second leading reason was that the study reported physical activity and exercise but only included physiological measures and did not include measures of social inclusion.



**Figure 1.** Systematic literature search.

**Critical appraisal**

In general, the included studies have strong theoretical frameworks and a clear description of the research setting and data collection procedures. This makes sense when we consider that a number of the studies are program evaluations (e.g., Barton, Griffin, & Pretty, 2012; Corring, Lundberg, & Rudnick, 2013). Rationale for choice of data collection tool and the fit between the research question and method of analysis were also strong, all indicators of well-designed studies. However, many studies do not explicitly take sample size into consideration in the design of the study, either through mechanisms of theoretical saturation or power. Again, because many of the studies were program evaluations, participant involvement would therefore be restricted by the size of the program. Additionally, for the quantitative studies, little mention was made of the reliability and validity of the measurement tools used, leaving these researchers to wonder about the effectiveness of the tools. For most studies there was weak justification for the chosen analytical method in the data analysis sections and little articulation for why the data analysis method was chosen over others, although this may be explained by having little space in the article to write about these concerns. Finally, there is little to no user involvement in the design of most of the studies. We provide a table of the main strengths and weaknesses of each article (see Appendix A).



**Table 1.** Study Information and Participant Demographics.

Location	Number of Studies	Percent
United Kingdom	15	42.9
United States	10	28.6
Australia	3	8.6
Norway	3	8.6
Canada	2	5.7
Finland	1	2.9
Scotland	1	2.9
Total	35	100.0
Mean Age		
19 to 40	7	20.0
41 to 55	26	74.3
Over 56	0	0.0
Total	33	94.3
Missing	2	5.7
Total	35	100.0
Diagnosis		
Multiple within study	15	42.9
Not specified	11	31.4
Exclusively Depression	6	17.1
Exclusively Schizophrenia	3	8.6
Total	35	100.0
Type of program		
Physical Activity	17	48.6
Creative Activities*	13	37.1
Peer support	3	8.6
Wellness Education	2	5.7
Total	35	100.0

\*For example, arts, choir, music.

### **Study information and demographics of study participants**

As indicated by our inclusion and exclusion criterion, all 35 interventions were community based, whether they were offered through a recreation or mental health agency or a collaboration between both. All of the interventions or programs were provided for individuals with mental illnesses. Fifty-three percent of participants across all 35 studies were women, 14% of studies comprised all male participants, and no study comprised all female participants. Ethnicity was not indicated in 75% of the studies. Of the remaining, 11% of the studies reported all Caucasian participants, and 14% of studies indicated a total number of participants who identified as African American ( $n = 14$ ), Pakistani ( $n = 10$ ), Indian ( $n = 5$ ), Asian ( $n = 5$ ), African Caribbean ( $n = 4$ ), Irish ( $n = 4$ ), Caribbean ( $n = 4$ ), Bangladeshi ( $n = 1$ ), and Greek ( $n = 1$ ). The majority of studies were conducted in the United Kingdom ( $n = 15$ ) and United States ( $n = 10$ ) (71.4% of the total) with two studies (5.7%) in Canada (see Table 1). Most (65.7%) are small studies, with less than 25 participants and focus on the age group of 41 to 55 (74.3%; Table 1). Many studies included participants with multiple mental illnesses (42.9%; e.g., Bipolar and depression) or did not specify the diagnosis of participants (31.4%; see Table 1).

### **Characteristics of included articles**

Although the search protocol included articles from 2000–2014, the majority of articles (80.0%) were published between 2007 and 2013, with the most articles ( $n = 5$ ) published in the *Psychiatric Rehabilitation Journal*. Fourteen studies were quantitative and 17 were qualitative, with four studies having both qualitative and quantitative methods. Although



the focus of the review was social recreation, we included physical activities if the study focused on the psychosocial impacts of this physical activity. Therefore, the top two types of recreation included in the study were physical activities and creative activities (see Table 4).

### ***Benefits of participation***

The benefits associated with participants' recreation experiences are categorized under six main themes, with percentage of studies containing the theme in brackets: social connections (80.0%), psychological improvements (77.1%), physiological benefits (60.0%), physical health (40.0%), practical skills (37.1%), and cognitive improvements (22.9%). The most frequently identified theme within the articles is social connections. Within this theme, studies referred to the following social benefits of recreation programs that supported the creation of social connections: expanded social networks (e.g., people in the program made new friends in the program); opportunities for social connection (e.g., a sense of connection and belonging); change in social skills (e.g., focusing less on themselves and more on others) and social inclusion, or the recreation activity increased access to community and community resources. As examples of social inclusion, participation in a football club was found to encourage socializing outside the club (Darongkamas, Scott, & Taylor, 2011). Similarly, a community art venue was seen as a metaphor for a bridge into the community (Howells & Zelnik, 2009; see Table 2).

Psychological improvements were also important, with increased self-esteem and flow (i.e., absorption in the present moment; Csikszentmihalyi, 1990), the most frequently identified benefits (45.7%). Additional psychological benefits reported in the studies included a sense of accomplishment (34.3%), increased self-confidence (34.3%), and reduced stress and increased ability to cope (25.7%). With regards to improved quality of life and life satisfaction, two studies did not demonstrate significant improvements, the majority of studies did, thus supporting these constructs amongst the psychological benefits of recreation. In addition to psychological benefits, studies also identified physical, cognitive, and physiological benefits. Physical benefits were related to improved physical health (22.9%), improved sleep (11.4%), increased energy (8.6%), and weight management (8.6%). Cognitively, two studies (5.7%) noted improvement in concentration. Physiological benefits included a better mood (22.9%) and management of condition, including decreases hospitalization (22.9%). For management of condition there was one quantitative study that did not outline statistically significant findings, while three others did. Practical benefits of community recreation participation included skill development (22.9%) and the benefits of the recreation activity spilling into other areas of life (14.2%).

As described above, each paper was critically appraised and scored according to the QATSD in Table 3. Of the papers in the top quartile, 100% list social benefits, primarily through expanded social networks (88.9%) and social inclusion (44.4%). Developing practical skills (77.8%) and psychological improvements (66.7%) through increased self-esteem and self-confidence (77.8%) are also indicated.

### ***Barriers to participation***

We also evaluated studies for descriptions of factors that affected people's ability to participate. Barriers that impacted participant attendance and level of participation included physical fatigue (14.3%), experiencing anxiety in the program (11.4%), and cost (8.6%) (see Table 4).

**Table 2.** Benefits of Recreation Participation.

	Number of Studies	Percent of Total
Social Benefits		
Expanded social network	22	62.9
Opportunity for social connection	14	40.00
Change in social skills	10	28.6
Social inclusion	10	28.6
Psychological Improvements		
Fun and enjoyment, “Flow”	16	45.7
Increased self-esteem	14	40.00
Sense of accomplishment or achievement	12	34.3
Increased quality of life and promotes recovery	12	34.3
Increased self-confidence	12	34.3
Reduced stress and increased ability to cope	9	25.7
Increased life satisfaction	6	17.1
Increased awareness of thoughts and feelings	5	14.3
Self-expression or recognition	5	14.3
Development of a leisure or occupational identity	3	8.6
Appreciation of nature	3	8.6
Life perspective changes	3	8.6
A new ‘normal’ develops	3	8.6
Reduced substance abuse	2	5.7
Motivation for leisure increases	2	5.7
Physiological Changes		
Better mood	8	22.9
Management of condition	8	22.9
Cognitive Improvements		
Distraction or escape	3	8.6
Increased concentration	2	5.7
Physical Changes		
Better physical health	8	22.9
Helps with sleep	4	11.4
Increased energy	3	8.6
Weight management	3	8.6
Practical Benefits		
Skill development	8	22.9
Effects of leisure continue outside of specific activity	5	14.3
Increased work capacity	4	11.4
Continued leisure engagement (specific and general)	3	8.6

### ***Perceived attributes of successful programs and leaders***

While no study systematically evaluated the attributes necessary to make a program successful, a number of studies did describe attributes believed to be associated with success. Hypothesized attributes of successful programs included a nonjudgemental atmosphere (i.e., emotional safety), activities that encourage socialization, the discussion of shared experiences, and developing camaraderie in the group. Supportive environments also include flexibility and choice within the program and foster the learning of practical skills. Characteristics of successful leaders included an engaging or inclusive style that contributed to the comfortable atmosphere as well as knowledge about the specific context (see Table 5) Aspects of the program that detract from success included poor quality of equipment.

### **Discussion**

While the literature highlights many benefits of participation in recreation activities for people with mental illness, the systematic review of this work has focused on the physical health benefits associated with physical activity and exercise in people with mental health challenges (e.g., Bernard et al., 2013; Cabassa, Ezell, & Lewis-Fernández, 2010; Conn, 2010a, 2010b; Tseng,

**Table 3.** Benefits of Recreation Programs.

Author	Intervention	SC <sup>1*</sup>	PI <sup>2</sup>	PS <sup>3</sup>	PB <sup>4</sup>	PH <sup>5</sup>	CI <sup>6</sup>	Score <sup>7</sup>
(Dingle, Brander, Ballantyne, & Baker, 2013)	Choir	+	**	+	+	+	+	35
(Diane Crone, & Guy, 2008)	Horseback Riding	+	+	+	+	+	+	33
(Rappe, Koivunen, & Korpela, 2008)	Gardening	+	+	+	+	+	+	20
(Mason & Holt, 2012)	Soccer	+	+	+	+	+		25
(Khalil, 2012)	Exercise	+	+	+	+	+		24
(Carter-Morris & Faulkner, 2003)	Soccer	+	+	+	+	+		20
(Lloyd, Wong, & Petchkovsky, 2007)	Arts	+	+	+	+	+		34
(Bizub, Joy, & Davidson, 2003)	Horseback Riding	+	+	+	+			17
(Makin & Gask, 2012)	Arts	+	+	+	+		+	29
(Lipe et al., 2012)	Arts	+	+	+	+		+	17
(Barton, 2011)	Yoga and Dance	+	+	+	+			25
(Pelletier, Nguyen, Bradley, Johnsen, & McKay, 2005)	Physical Activity	+	+	+		+		14
(McElroy, Evans, & Pringle, 2008)	Soccer	+	+	+		+		21
(Grocke, Bloch, & Castle, 2009)	Music	+	+	+				31
(Darongkamas et al., 2011)	Soccer	+	+	+				15
(Stacey & Stickley, 2010)	Arts	+	+	+				38
(Griffiths, 2008)	Arts	+	+		+		+	28
(Wilson et al., 2010)	Outdoor camp	+	+		+	+	+	24
(McCorkle, Dunn, Yu, & Gagne, 2009)	Peer Support	+	+		+		+	24
(Moran & Alon, 2011)	Theatre	+	+		+			26
(Gammonley, 2001)	Peer Support	+	+		+			17
(Crone, 2007)	Walking	+	+			+	+	18
(Mynard, Howie, & Collister, 2009)	Australian Football	+	+			+		33
(Cotton & Butselaar, 2013)	Outdoor camp	+	+			+		23
(Petryshen, Hawkins, & Fronchak, 2001)	Recreation	+	+					24
(Corring et al., 2013)	Horseback riding	+	+					21
(Howells & Zelnik, 2009)	Arts	+		+	+			35
(Gonzalez, Hartig, Patil, Martinsen, & Kirkevold, 2011)	Gardening	+		+				30
(McCorkle, Rogers, Dunn, Lyass, & Wan, 2008)	Peer Support	+						30
(Crawford et al., 2012)	Arts	—	—	—				27
(Grawe, Hagen, Espeland, & Mueser, 2007)	Education		+	—				24
(Barton et al., 2012)	Swimming		+					22
(Dowrick, Billington, Robinson, Hamer, & Williams, 2012)	Reading			+				12
(Hackney & Earhart, 2010)	Dance				+			20
(Heasman & Atwal, 2004)	Education				+			16

\*<sup>1</sup>social connections, <sup>2</sup>psychological improvements, <sup>3</sup>practical skills, <sup>4</sup>physiological benefits, <sup>5</sup>physical health, <sup>6</sup>cognitive improvements, <sup>7</sup>critical appraisal score.

\*\* + (study demonstrated benefit), — (benefit was not proven), blank (benefit was not investigated).

**Table 4.** Negotiated Barriers.

Barriers Code	Number of Studies	Percent
Physical fatigue	5	14.3
Experience anxiety	4	11.4
Cost	3	8.6
A lack of motivation	2	5.7
Lack of a friend to go with	2	5.7
Stigma	1	2.9

Gau, & Lou, 2011; Verhaeghe, De Maeseneer, Maes, Van Heeringen, & Annemans, 2011). Additionally, while the barriers and facilitators to participation are well outlined for physical activity, they have not been evaluated for other types of recreation. This integrative review aimed to address these gaps in the literature.

This review makes two contributions. First, we have created a search strategy that enables the identification of a range of community-based recreation activities pertaining to persons with mental health issues. Second, through synthesis of these findings we have added to the

**Table 5.** Program Characteristics.

Supportive Social Environment	Number of Studies	Percent
Creation of a stimulating, nonpressurized, nonjudgmental atmosphere that emphasizes physical and emotional safety	9	25.7
Develop camaraderie amongst the group	5	14.3
Flexibility and choice	4	11.43
Emphasize socialization	2	5.71
Having company while doing the activity	2	5.71
Emphasize communication and elicit discussion where personal ideas, feelings, opinions and experiences are mutually shared.	2	5.71
Learn practical skills	2	5.71
Characteristics of successful leaders		
Coaches made people feel comfortable and at ease through their engaging, inclusive style	3	8.57
Leaders who are knowledgeable about the specific context	2	5.71
Aspects of the program that detract from success		
Poor quality of equipment	2	5.71

existing literature which, until now, has focused on physical activity for mental health (e.g., Carless & Douglas, 2012). The community-based recreation activities examined in this review, including creative arts, music, quiet activities, and peer support, demonstrate the breadth of the recreation sector's potential in addition to physical activities and exercise in supporting individuals with mental health challenges in recovery and social inclusion. Such findings supports the tenets of positive psychology as means of supporting recovery by highlighting the value of attaining pleasure, commonly associated with participation in these types of activities. Moran and Nemec (2013) assert that this not only provides immediate gratification, but also increases "personal capital, including physical, intellectual, social and psychological resources" (p. 203), which contributes to resilience.

Our results support existing literature that identifies the psychological, physical, physiological, and cognitive benefits of recreational activities (e.g., Happell et al., 2011; McNeill et al., 2006). In particular, the top quartile of studies in our review reveals that recovery is supported through increased self-esteem and self-confidence, and expansion of individual social networks and feelings of social inclusion. These findings support the value of engagement in community-based recreation as a way to support recovery.

Carless and Douglas (2012) have defined the importance of social and cultural environments and the need for skilled leaders. Similarly, this review supports previous assumptions that the social dimensions of community-based recreation (e.g., having a supportive environment that fosters the creation of social connections) are essential in programming that supports the recovery of people with mental illness (Tondora, Miller, Slade, & Davidson, 2014). Our study also supports the hypothesis that community recreation programs that emphasize the social environment (e.g., intentional development of camaraderie) are more likely to support the social inclusion of individuals with mental health challenges. This is important because there is a growing base of knowledge to suggest that people with a mental illness are actually more disabled by the social implications of their illness (e.g., stigma, social exclusion) than by the symptoms themselves (Davis, 2013).

While our study focused on environments that were designed for people with a mental illness, the recovery literature suggests an emphasis on supporting people to also connect with naturally-occurring activities within the community, as "an antidote to potential lifelong dependency on formal mental health services" (Tondora et al., 2014, p. 34). Thus, further exploration of ways to create and maintain supportive and inclusive environments within

community-based recreation and a detailing of which features of supportive environments most directly support social inclusion is required.

From our results it is also clear that research needs to be done with more diverse populations. As ethnicity was not included in 75% of the studies, we can only surmise that the participants were Caucasian, and therefore that this group is overrepresented in the research. Additionally, our critical appraisal revealed that it is rare to include individuals with mental health challenges in the design of the programs and research study. Both of these instances reveal that more care needs to be taken in the development of research studies to include mental health users in the design and evaluation of programs and that the research needs to intentionally focus on more diverse populations. Our results also indicate the need for more research in northern countries (e.g., Canada) where weather and rural locations can significantly impact choice and accessibility to community recreation.

Limitations of our study include that it is often difficult to control for positive publication bias. However, a hand search the references of the final 35 articles in this integrative review did not reveal evidence of positive publication bias. The critical appraisal was undertaken using the QATSDD tool that allows for an evaluation of the research process (i.e., method and methodology) rather than the product (i.e., results). However, the tool is a subjective dialogue tool rather than an objective evaluation. We also found that there was ambiguity in the anchors which contributed to differing scores between paired researchers. Although Sirriyeh, Lawton, Gardner and Armitage (2012) provide no cut-off score to distinguish a good research paper from a bad research paper, the goal of the appraisal is to compare each article relative to the other articles. Therefore, the benefits of this tool are to distinguish good research from marginal research and to assess the state of the research as a whole on a particular topic (See Fenton, Lauckner, & Gilbert, 2016 for a further critique of this tool).

In conclusion, we make the following recommendations that we hope will help to build a research base that can better inform policy: a) more research is needed on what program characteristics are most essential for creating welcoming and inclusive recreation environments; b) all of the interventions in this study were catered to individuals with mental illnesses. In order for these individuals to access integrated programming, the capacities of front line recreation workers and mental health workers need to be developed to better deliver inclusive recreation; c) there is a need for more research on diverse populations, in rural locations and northern countries; d) our critical appraisal of the studies indicates that many are program evaluations and therefore have small sample sizes, indicating a need for studies with larger samples, likely with quantitative methods; and finally, e) both the recovery model and the tenets of positive psychology could be used more explicitly as theoretical frameworks to guide contemporary research regarding the potential of community-based recreation to influence recovery and social inclusion. Attention to these recommendations will advance the capacity of community-based recreation to support people with mental illness in acquiring the benefits of social inclusion and full citizenship that come with recovery.

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## Appendix A. Search protocol

Search Engines: Ebscohost (Databases: CINAHL, Psychinfo, Sportdiscus, Academic Search Premier, Alternative Press Index, Public Affairs Index, and Psych Article), PubMed and Embase

Ebscohost Search Terms: ((*mental*\*) N3 (*health*\* OR *ill*\* OR *disorder*\* OR *wellness*)) AND (*leisure*\* OR *recreation*\* OR *sport*\* OR “physical activity” OR “active living” OR *social*\* OR *outdoor* OR *volunteer*) AND (*program*\* OR *initiative*\* OR *intervention*\* OR *community* OR *activity*)

Limiters: Adults, 2000 to 2014, Abstract as the search area, Scholarly journals.

PubMed Search terms: (((*program*\*[Title/Abstract] OR *initiative*\*[Title/Abstract] OR *intervention*\*[Title/Abstract] OR *community*[Title/Abstract] OR *activity*[Title/Abstract])) AND ((*leisure*\*[Title/Abstract] OR *recreation*\*[Title/Abstract] OR *sport*\*[Title/Abstract] OR “physical activity”[Title/Abstract] OR “active living”[Title/Abstract] OR *social*\*[Title/Abstract] OR *outdoor*[Title/Abstract] OR *volunteer*[Title/Abstract])) AND ((“mental health”[Title/Abstract] OR “mental illness”[Title/Abstract] OR “mentally ill”[Title/Abstract] OR “mental disorder”[Title/Abstract] OR “mental disorders”[Title/Abstract] OR “mental wellness”[Title/Abstract]))

Filters: Publication date from 2000/01/01 to 2014/12/31; English; Adult: 19+ years

Embase: ((*program*\* OR *initiative*\*) OR (*intervention*\* OR *community* OR *activity*))

AND ((*leisure*\* OR *recreation*\* OR *sport*\* OR “physical activity” OR “active living” OR *social*\* OR *outdoor* OR *volunteer*)) AND ((“mental health” OR “mental illness” OR “mentally ill” OR “mental disorder” OR “mental disorders” OR “mental wellness”))

Limiters: 2000 to 2014, Abstract, Humans, with abstract, only in English, article in press  
Including: Cochrane review, systematic review, controlled clinical trial, randomized control trial, meta analysis, article, article in press, conference abstract, conference paper, review, young adult, adult, middle aged, aged, very elderly

## Appendix B. Inclusion criteria

### Who:

Include adults (over 19 years old) with a mental illness

Exclude children and youth, caregivers, and parents of children and youth, and individuals with mental retardation, physical chronic conditions like dementia, stroke, cancer, heart disease, TBI, or those who are at risk for mental problems (e.g., older adults at risk because of social isolation or frailty or life trauma).

### Where:

Include community-based recreation (peer support, recreation organizations, mental health organizations), and municipal recreation as long as the program includes recreation components. Include day programs.

Exclude home visits by practitioners as well as telephone-based initiatives. Exclude institutionalized populations in hospitals, prisons, and in-patient facilities. Exclude programs where

people are recreating alone (e.g., videos at home, independent workbooks) or designated as therapy.

### What:

Include interventions, programs, services, or initiatives from the recreation or mental health sector (e.g., 'healthy lifestyle' interventions, peer support programs, community-based service delivery, recreation therapy) as long as the initiative explicitly identifies recreation as a focus, and includes the following:

- A program focus on rehabilitation, recovery, prevention, or wellness
- Is participant or instructor led
- Intentionally addresses psychosocial outcomes, social inclusion, or increased participation as an outcome
- Explicitly defined (e.g., an activity rather than a recreation center or clubhouse setting as a whole).

Exclude programs that *primarily* emphasize exercise, fitness, or physical activity and/or outcomes that are measured physiologically (e.g., blood pressure, heart rate, cholesterol) or physically (e.g., weight loss, BMI, or body composition, strength, power and flexibility changes) or that focus on physical behavior changes (e.g., exercise behavior), cognitive behavioral therapy, or prayer.

## Appendix C. Major strengths (S) and weaknesses (W) of each paper

(Barton, 2011)	S: Clear rationale provided for need for the study and many different means provided for participants to respond (e.g., doodling, interview)	W: No inclusion of users in design of research
(Barton, Griffin, & Pretty, 2012)	S: Detailed explanation of theoretical framework although didn't clearly lead into an RQ	W: no justification for measurement tools and sample size
(Bizub et al., 2003)	S: Description of the research setting	W: Didn't describe choice of methodological approach, no user involvement
(McCorkle, Dunn, Wan, & Gagne, 2009)	S: volunteer and client perspectives/benefits of facilitated friendship; methodology good generally; thorough analysis process described;	W: interview guide not well described; not evidence of user involvement in design.
(McCorkle, Rogers, Dunn, Lyass, & Wan, 2008)	S: focused on idea of intentional friendships; repeated measures with people was valuable;	W: no user involvement in design, nothing presented about reliability/validity of tools
(Carter-Morris & Faulkner, 2003)	S: Appropriate method for the chosen research question	W: Limitations not defined, no user involvement, lack of clarity in methodology
(Corring, Lundberg, & Rudnick, 2013)	S: Clear aims provided and detailed description of reliability of findings provided	W: No inclusion of users in design of research and limited justification for analysis method
(Cotton & Butselaar, 2013)	S: good procedural description, research setting is well described	W: didn't talk about what mental health issues were so how do we generalize, poor description of how they developed and did the qualitative data analysis - no design explained

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(Crawford et al., 2012)	S: Good sample size, evidence of sample size considered in analysis, appropriate design	W: User involvement non existent, poor rationale for measurement tools,
(Crone & Guy, 2008)	S: Included previous participant and user in designing study and collecting data	W: Isn't clear how many people participate in sports therapy and genders to know representativeness of sample
(Crone, 2007)	S: clearly stated objectives and focus on experiences of person with lived experiences	W: Analysis method seems excessive and disconnected with research questions; didn't ask about challenges or factors outside of program that might have influences experiences in the program; no mention of multiple analysts; limited involvement of user in design
(Darongkamas, Scott, & Taylor, 2011)	S: Clear description of study participants and of decision-making about procedures used in data collection	W: No clear statement of purpose (other than general evaluation); lack of clarity about how data was compared with that from previous study; no statistical analysis of data
(Dingle, Brander, Ballantyne, & Baker, 2013)	S: Detailed procedure for data collection	W: No indication of user involvement in design
(Dowrick, Billington, Robinson, Hamer, & Williams, 2012)	S: Clear description of setting and intervention; multiple data collection methods	W: No clear description of purpose, objectives, or research question, recruitment strategy; did not adhere to basic principles of design
(Gammonley, 2001)	S: Representative sample, detailed recruitment, good discussion of framework, and methods	W: small sample, Rationale for measurement tools, sample size not discussed, User involvement nonexistent, program evaluation but not stated, analysis of scales by item rather than construct
(Gonzalez, Hartig, Patil, Martinsen, & Kirkevold, 2011)	S: Overall, thorough description of study and procedures	W: Some variations in the data collected at different intervals; associational data only, no causation can be drawn; Research design was not ideal to address the research questions
(Grawe, Hagen, Espeland, & Mueser, 2007)	S: good sample size, measurement tools, explicit only associations and not causations,	W: an evaluation, no alignment of tool to objectives, should have been a controlled study
(Griffiths, 2008)	S: Aims are clearly reported and detailed procedure of data collection provided	W: There is limited information regarding sample size and no evidence of user involvement
(Grocke, Bloch, & Castle, 2009)	S: Aims were clearly articulated and study design well explained	W: No user involvement; limited information about reliability and validity of measurement tools
(Hackney & Earhart, 2010)	S: Statement of aims/framework, fit between research question and choice of measurement tools	W: small sample, User involvement non existent, well known measures used but no info on validity and reliability
(Heasman & Atwal, 2004)	S: The are aims clearly identified	W: There is limited information regarding sample and data collection. There is no evidence of user involvement in design
(Howells & Zelnik, 2009)	S: The aims are clearly identified as is the user involvement in design	W: There is little rationale for sample size
(Khalil, 2012)	S: sound rationale and theoretical basis for study; clear objectives; mixed method study provides richness and helps explain quant findings; detailed recruitment; good practical implications	W: strengths and limitations not discussed; research question didn't fit quality focus of this paper; minimal information about analysis process

*(Continued on the next page)*

*(Continued)*

(Lipe et al., 2012)	S: Included a clear statement of objectives and research setting collected data at multiple points	W: small sample size, not a tested measurement tool, unclear if main goal was to describe intervention or evaluate effectiveness
(Lloyd et al., 2007)	S: Good adherence to the expectations of the design, good match between research question and approach, transparent design	W: unclear methodology, unclear how the field notes were used as data and how consensus was reached
(Makin & Gask, 2012)	S: clear research question; valuable contribution of value added of art (in relation to talk therapy);	W: not enough explanation of data collection and analysis; only spoke with those who had positive experiences with art
(Mason & Holt, 2012)	S: aims clear; rationale for using qualitative research good; cool that focuses on male as often this group is harder to engage so valuable contribution	W: weak methodology with limited connection to theoretical framework; no sense of sample size or recruitment methods
(Moran & Alon, 2011),	S: good statement of recovery framework and connecting it to the research, details on study procedures	W: small sample, qualitative portion not well described in results
(Mynard, Howie, & Collister, 2009)	S: clear description of research setting, data collection process; analysis; demonstrates occupational perspective (which I think is a strength – declaring my bias here!)	W: rationale for sample size not clear; no explicit user involvement.
(Pelletier, Nguyen, Bradley, Johnsen, & McKay, 2005)	S: Clear description of research setting; balanced discussion; good discussion of limitations	W: Qualitative portion of research was not robust
(Petryshen, Hawkins, & Fronchak, 2001)	S: representative sample	W: an evaluation, a more appropriate design could have been done – could have used a control group as the evaluation was a small part of a larger program – not clear on who was involved in the program
(Rappe, Koivunen, & Korpela, 2008)	S: Full season of data collection at the garden, results shared with participants and shared before publication	W: User involvement nonexistent, small sample, support people and people with mental illness were compiled and no evaluation of the effects on symptoms.
(Stacey & Stickley, 2010)	S: heavy user involvement, methodology well developed and adhered to.	W: no description of researcher's qualifications to undertake the research
(Wilson et al., 2010)	S: overall sound methodology.	W: lacking in theoretical framework; evaluation only and no ethics completed; not sure if methods leads to model? No user involvement