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Abstract

Purpose: To explore the perceptions of individuals with Parkinson's disease (PD) on their experiences within a community based, non-contact boxing program. Specifically, this study considered how these individuals perceived non-contact boxing to influence their social and community engagement and factors influencing ongoing participation in this program. **Method:** This was a phenomenological case study that utilized qualitative methods for data collection including semi-structured interviews and observation. Colaizzi's method was used for data analysis. A convenience sample obtained from a boxing club that offered PD specific boxing classes was used. The sample included 10 participants (3 female, 7 male) ranging in age from 52 to 84 years. Participants typically attended a 75 minute boxing class two to three times per week. **Results:** The exhaustive description of the phenomenon was that individuals with PD have a strong desire to maintain the life they had prior to their diagnosis and chose activities, such as non-contact boxing, which supported their ability to sustain that lifestyle. Two themes were identified which included 1) "The people I've met here and spent time with will be friends forever" and 2) "I don't have to be Muhammed Ali. It's not about that." **Conclusions:** This study provided a basic understanding of the subjective experiences of individuals with PD who participated in non-contact boxing. Findings demonstrated that non-contact boxing facilitates the growth of supportive relationship for individuals with PD. The study also found that individuals with PD believe non-contact boxing provided a variety of physical, cognitive, and emotional benefits which facilitated their ability to maintain participation in valued activities.

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Perceptions of the Impact of Non-Contact Boxing on Social and Community Engagement for Individuals with Parkinson's Disease: A Qualitative Study

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Abstract:

Purpose: To explore the perceptions of individuals with Parkinson's disease (PD) on their experiences within a community based, non-contact boxing program. Specifically, this study considered how these individuals perceived non-contact boxing to influence their social and community engagement and factors influencing ongoing participation in this program. **Method:** This was a phenomenological case study that utilized qualitative methods for data collection including semi-structured interviews and observation. Colaizzi's method was used for data analysis. A convenience sample obtained from a boxing club that offered PD specific boxing classes was used. The sample included 10 participants (3 female, 7 male) ranging in age from 52 to 84 years. Participants typically attended a 75 minute boxing class two to three times per week. **Results:** The exhaustive description of the phenomenon was that individuals with PD have a strong desire to maintain the life they had prior to their diagnosis and chose activities, such as non-contact boxing, which supported their ability to sustain that lifestyle. Two themes were identified which included 1) "The people I've met here and spent time with will be friends forever" and 2) "I don't have to be Muhammed Ali. It's not about that." **Conclusions:** This study provided a basic understanding of the subjective experiences of individuals with PD who participated in non-contact boxing. Findings demonstrated that non-contact boxing facilitates the growth of supportive relationship for individuals with PD. The study also found that individuals with PD believe non-contact boxing provided a variety of physical, cognitive, and emotional benefits which facilitated their ability to maintain participation in valued activities.

Keywords: Parkinson's disease, non-contact boxing, boxing, social engagement, community engagement

Introduction

Parkinson's disease (PD) is a neurodegenerative disorder that has debilitating effects on up to ten million individuals worldwide.¹ It is distinguished by motor and non-motor characteristics which commonly include tremors, postural instability, and rigidity, as well as cognitive, social, and emotional deficits.^{2,3} These deficits have been found to negatively impact performance in activities of daily living and to decrease quality of life.^{2,3}

Although the concept of quality of life is comprised of three primary components (physical, cognitive, and social), research on PD has focused primarily on interventions targeting only the physical and cognitive symptoms.³ There is a large base of literature that confirms the benefits of general exercise for individuals with PD.⁴⁻⁷ Researchers have shown that a variety of exercise and movement-based interventions impact the physical and cognitive symptoms of PD.⁸⁻¹⁰ Dance, music-based movement therapy, and Tai Chi have been found to influence gait, disease progression, activity levels, and quality of life.¹¹⁻¹⁴ Non-contact boxing has led to improvement in functional mobility, activities of daily living, and perceived quality of life for individuals with PD.^{15,16} Many of these movement-based interventions have been found to be meaningful and valuable to individuals with PD, and several include a social component. However, research specifically examining the impact of movement and exercise on the social participation of individuals with PD has been limited.

Social participation, particularly for community-dwelling individuals with PD, may have benefits on quality of life and health. Singer's seminal work was the first to address the social effect of the disease, and other studies have also shown that social function may be challenging for people with PD.¹⁷ Schrag, Jahanshahi, and Quinn found that quality of life of persons with PD decreased as the disease progressed in severity, with the greatest levels of impairment occurring in physical and social function.¹⁸ In one study, patients self-reported they had the most problems with social function.¹⁹ Individuals with PD have been shown to be at risk for social isolation.²⁰ Brod, Mendelsohn, and Roberts found that participants reported feelings of social isolation.²¹ Likewise, Marr interviewed persons with PD;²² some of whom described social isolation due to embarrassment and disease progression.

The available research that examines the relationship between exercise and social function of individuals with PD is limited, particularly research focused on the subjective experience of persons living with the disease. The purpose of this study was to expand on the existing literature by examining social engagement through the perceived experience of individuals with PD engaging in a movement-based activity. Non-contact boxing as a community-based method for managing the symptomology of PD has become increasingly popular. Therefore, this qualitative case study addressed the following research question: How do individuals with PD perceive non-contact boxing impacts their social engagement?

Methods

Phenomenology was chosen as the study design because it allowed for an in-depth understanding of the subjective experiences of non-contact boxing phenomena within the PD community – a phenomena that has previously been unaddressed.²³ This study was conducted at a boxing club which offered non-contact boxing classes tailored towards individuals with PD. This study was approved by a university institutional review board.

Recruitment

The researcher attended multiple PD boxing classes at the boxing club to recruit participants. All individuals with PD who were participating in the PD non-contact boxing classes or who had participated within the past year were invited to participate in the study. Exclusion criteria included any individuals who did not speak English or were decisionally impaired. Recruitment was discontinued when data saturation was reached; that is, no new information was forthcoming from participants.

Data Collection

Qualitative semi-structured interviews were conducted face-to-face by the primary researcher utilizing a question guide with probes to facilitate additional information (Table 1). While the goal of the interviews was to explore the participants' perceptions of how non-contact boxing impacted their social engagement, questions were broad to encourage exploration of social and community activities beyond boxing which may have been influenced by their participation in the boxing classes. Written, informed consent was obtained prior to conducting each interview. The interviews were conducted at a location of the participants' choice to facilitate a comfortable environment. Interviews averaged one hour and were conducted over a six week time frame. All interviews were audio recorded and transcribed exactly for data analysis. Interviews were conducted until data saturation was obtained.

Table 1: Question guide for semi-structured interviews

Topic	Interview Questions	Probes
Introduction	Tell me about yourself and your experience with PD. What stage is your PD?	What are the symptoms you experience with your PD? How does your PD affect you and your life?
Social Engagement	Tell me about your social activities (ie: spending time with friends, building new relationships, activities you enjoy doing with others).	How has PD impacted your social interactions? Have your social interactions changed since you started boxing? How has boxing impacted your social interactions?
Community Engagement	Tell me about the community activities you participate in (ie: support groups, religious activities, shopping).	How has PD impacted your ability to participate in community activities? Has your ability to be involved in community activities changed since you started boxing? How has boxing impacted your community activities?
Continued Participation in Boxing	Why do you come to boxing?	What made you come to boxing initially? Why do you keep coming to boxing? What impact has boxing had on your life?

The researcher also completed two, twenty minute observations of PD-specific boxing classes, documented with field notes, to triangulate with interview data.

Data Analysis

This study utilized Colaizzi's method of data analysis as outlined by Sanders because it was a structured framework appropriate to analyze the complex nature of phenomenological data.²⁴ The researcher repeatedly reviewed the audio recorded interviews and the associated transcriptions to ensure a complete understanding of each individual's experience. The researcher used printed transcripts to highlight significant statements. The significant statements were then transferred into a spreadsheet to increase organization, remove repetitions, and create formulated meanings. Formulated meanings allowed the researcher to extract general meanings from the significant statements while still maintaining the context.^{24,25} Table 2 provides examples of how formulated meanings were assigned to significant statements. The finalized formulated meanings were organized into an exhaustive description of the phenomena under study, with supporting themes.

Table 2: Examples of significant statements and corresponding formulated meanings.

Significant Statement	Formulated Meaning
"At boxing everybody will give each other high fives and say good job- you couldn't do that before and now you can do it."	Individuals with PD feel like their boxing class provides them with a support system.
"I've been exercising before I was diagnosed and I've been exercising since."	A PD diagnosis does not change the activities that an individual finds valuable.
"I feel like I'm in better shape mentally and physically than I was when I was diagnosed."	Individuals with PD believe they have experienced physical and mental benefits from participating in non-contact boxing.

Member checking was used to ensure the exhaustive description was authentic to the experience of the participants.²⁵ The exhaustive description was emailed to a sample of the participants to ensure it truly represented their overall experiences. Two participants responded and agreed the descriptions were representative of their experience so no changes were made to the final analysis.

Additionally, the researcher used a reflexivity journal, expert review, an audit trail, and triangulation to increase trustworthiness within the study. Triangulation included data collection through interviews and observations, and comparing results to extant literature. These processes added additional rigor within the study.^{24,26}

RESULTS

The convenience sample included 10 participants (3 female, 7 male) ranging in age from 52 to 84 years. All participants participated in the entirety of the study. All participants were Caucasian. Participants had been participating in non-contact boxing from approximately three months to five years, and ranged in disease severity from "less severe" to "more severe/ needs more help," which were categories ascribed by the boxing club administrators to place participants in classes most appropriate for their level of ability. However, not all participants were able to recall which group they had been assigned to, or joined either boxing group as they were able. Participants reported they typically attended a 75 minute boxing class two to three times per week. All ten participants reported they had not participated in non-contact boxing prior to receiving their diagnosis of PD.

From ten interviews, 538 significant statements were identified with an average of 54 statements per interview. A total of 307 formulated meanings were given to the significant statements. During the analytic process, one overarching theme became apparent as the exhaustive description of the phenomenon, and two themes emerged that supported the phenomena. Direct quotes from the participants were used to provide support.

Exhaustive Description of the Phenomena

A diagnosis of PD has a significant impact on an individual's participation in activities. One participant stated that after the PD diagnosis

"I withdrew from being around people for a while" (participant 1) and another stated "Most people, when they're told they have an incurable disease, they'll just go to the couch. And a lot of people do" (participant 8).

However, the overarching finding of this study was that participants had a strong desire to maintain the life they had prior to a diagnosis of PD and took effort to identify activities, such as boxing, that assisted them in maintaining their desired life. Comments such as

"We never slow down. I won't let IT [PD] slow me down" (participant 7) [and]

"I want to focus on what I can do to help myself now and keep as much function as I can" (participant 9)

demonstrated the motivation that these individuals had to sustain their previous activities for as long as possible. This was particularly prevalent when discussing their desire to maintain their prior social activities. This study found that both previous personality traits and valued social activities impacted social interactions after a diagnosis of PD. When asked how PD had impacted his social interactions, one participated stated

"I don't get out a lot, but that's not necessarily different than before" (participant 1).

The participants also strove to continue being involved in their previous activities even if the symptoms of the PD limited their abilities to engage in those activities. This was indicated by the statement,

"I've not stopped anything. I still do all the volunteering that I've done in the past. I'm just...I feel a step back" (participant 6) [and]

"I've still been working one day a week. That's been very rewarding" (participant 3).

While the maintenance of prior social activities was important, the development of new social activities was valuable to individuals after a PD diagnosis. New activities that were identified included participating in non-contact boxing, a PD support group, and singing in a choir. The value that one participant placed on boxing was illustrated by the comment,

"[boxing] just gives you something meaningful and constructive to focus on that is actually adding value to the progress you are trying to make" (participant 6).

It is notable to mention that the participants in this study specifically sought out these new social activities - specifically boxing - after their PD diagnosis to obtain benefits they perceived to allow them to maintain their desired lifestyle. The participants felt that boxing and other new social activities were beneficial and enjoyable, but the true value came from maintaining their desired lifestyle. Statements that supported this finding included one participant stating

"I would recommend [boxing] to anybody diagnosed with PD. I enjoy my time over there, but if I wasn't getting the results that I'm getting then I may not enjoy it so much" (participant 5) [and]

"You see people...5, 10, 15 year PD people and you think, gosh, I could be like that. Wheelchair bound and unable to communicate. I just don't want to be like that... And I think the boxing will help with that. So in a sense, it could be saving my life" (participant 2).

Two themes provide further support for the exhaustive description.

Theme 1: "The people I've met here and spent time with will be friends forever."

The participants felt that social activities helped build and strengthen their relationships. They had the opportunity to build relationships with others who were involved in boxing and those who they spent time with during other activities. One participant stated,

"You get to know these guys [at boxing] and you want to catch up with them" (participant 4). Another stated, "I've got a number of pretty good friends that I made at church" (participant 5).

Social activities, such as boxing, brought people together to help foster relationships. In addition, the participants felt the people they chose to build relationships with, especially their boxing peers, provided them with support and encouragement; particularly because their peers were going through similar experiences.

"There is a core group of people [at boxing] and we all understand each other" (participant 3)

illustrated this concept. The perceived support and encouragement was a strong factor that contributed to ongoing participation in non-contact boxing. These relationships also allowed the individuals to maintain the social connectedness they enjoyed prior to their diagnosis.

Theme 2: "I don't have to be Muhammed Ali. It's not about that."

Participants made it clear their decision to participate in non-contact boxing was not to become a skilled boxer, but to obtain the benefits that boxing provided them. Study participants perceived a variety of physical, cognitive, and emotional benefits resulted from their participation in boxing. One participant stated,

"I always feel good and invigorated after the hour and a half workout. I feel better leaving that place than I felt going in to that place each morning" (participant 10).

All study participants perceived physical benefits (e.g., decreased tremors, improved balance, and improved coordination) from boxing. The participants also felt that participation in non-contact boxing assisted them in fighting the disease progression and was a major reason for continuation in the activity. Participants made statements such as,

"I keep going because I hope it slows down the relentless progressive deterioration that I know I'm in store for" (participant 6).

DISCUSSION

This study was unique in that it is the only known research that has explored subjective experiences for individuals with PD participating in non-contact boxing with a specific focus on social and community engagement. This study found that participation in boxing enabled the participants to build supportive and encouraging relationships. Boxing itself became a valuable social activity for participants by facilitating new relationships, providing support through connecting individuals going through similar experiences and opportunities for these relationships to expand to activities outside of boxing. These findings align with other research showing that social activities in general foster valuable relationships.²⁷⁻²⁹ The social impact of non-contact boxing, and similar group activities, was a motivating factor for continued participation in the activity.

All of the participants were new to non-contact boxing since receiving their diagnosis. Researchers have demonstrated the value of participation in preferred activities.³⁰⁻³² Others have found that decreased participation in activities may lead to lower health-related quality of life.³³ It is possible that participation in a social activity, such as non-contact boxing, is a factor that contributes to increased social and community engagement after diagnosis, and improves overall quality of life.

Similar to findings from other studies, individuals with PD in this study perceived that participation in non-contact boxing provided them with physical and cognitive benefits.^{15,16} Participants also reflected on perceived emotional benefits, which is a unique contribution to the literature. Participants felt the combined physical, cognitive, and emotional benefits contributed to their ability to engage in their valued social and community activities. This finding demonstrates a potential link between physical activity and social engagement. The perception that non-contact boxing helped to fight the physical progression of PD was also a significant motivating factor for continued participation, as others have demonstrated.^{15,16,34}

Based on the findings of this study, it is important for health care practitioners to consider the impact that participation in social activities may have for clients with PD. This is particularly vital for those who are vulnerable to social isolation.³³ While it may not be feasible for practitioners to refer clients to non-contact, community-based boxing programs, they should consider assessment of social isolation, review of patients' social support, and referral to other community- and movement-based programs with a social component.

Study Limitations

The researcher attempted, but was unable to recruit any individuals who were no longer participating in the non-contact boxing program, which may have provided further depth of analysis. Additionally, the participants were all recruited from the same boxing program, which may limit the transferability of the results.

Conclusion

This study provided an introduction into understanding the subjective experiences of individuals with PD who participated in non-contact boxing. This study was unique in that it examined the perceived social implications of boxing. Findings showed that the social component of participation in non-contact boxing facilitated the growth of supportive relationships. Additionally, participants felt that non-contact boxing provided them with physical, cognitive, and emotional benefits and the ability to continue to engage in valued activities post diagnosis. Therefore, non-contact boxing has the potential to positively impact the social engagement of individuals with PD.

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