

Exercise as Therapy for Schizophrenia: An Ethnographic Study

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As part of the emergence of alternative research paradigms in exercise and sport psychology, we draw upon data from an ethnographic study of 3 individuals with schizophrenia to explore the use of exercise as an adjunct therapy for schizophrenia. A 10-week exercise program of twice-weekly sessions was implemented. Participant observation and interviews with participants and their assigned key-workers were the primary sources of data collection used. The influence of exercise on the lives of participants and their mental health and the underlying mechanisms of change were explored. Our findings indicate that exercise has the potential to help reduce participants' perceptions of auditory hallucinations, raise self-esteem, and improve sleep patterns and general behavior. The process of exercising, via the provision of distraction and social interaction rather than the exercise itself, was very influential in providing these benefits. In conclusion, we strongly recommend the inclusion of exercise as an adjunct treatment in psychiatric rehabilitation.

Key words: exercise intervention, schizophrenia, ethnography, mental health

It has been widely reported that individuals with schizophrenia score well below the normal population and below other psychotic "patients" on physical fitness, with resident schizophrenics being found to be about half as active as nonschizophrenic residents (Chamove, 1986). People with schizophrenia are commonly overweight, have excess body fat, are cardiovascularly unfit (Morgan, 1970), and display physical and lifestyle profiles similar to other people with disabilities (e.g., people with heart disease, diabetes, or learning difficulties). Hesso and Sorenson (1980) suggest that the general physical condition of psychiatric patients is often so poor that it limits their possibilities for occupational rehabilitation, and therefore the physical benefits alone from regular exercise present a sufficient reason for inclusion in any form of psychiatric rehabilitation.

The number of studies on the therapeutic effects of exercise in schizophrenia is very low, and most of these consist of case reports, anecdotes, or small group

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studies. However, the research that does exist suggests an improvement in the behavior of schizophrenic patients. For example, Chamove (1986), in a study of 40 schizophrenic patients, found that nurses and the patients rated themselves as showing "significantly less psychotic features, less movement disorder, were less irritable, less depressed, less retarded, less tense and showed more social interest" (p.131) on days when they were relatively more active compared with ratings on days when they were less active. This was reported across all conditions: occupational therapy, swimming, work therapy, and gardening. Greatest improvements were reported by patients who were initially more sedentary. Chamove concluded that while inactivity was not the cause of their illness, simply altering their behavior toward more activity improved it.

In a more detailed study, Pelham and Campagna (1991) examined the physiological, psychological, and social effects of exercise in schizophrenic outpatients, relying on a single-subject design that emphasized questionnaire and interview techniques. The setting was a psychiatric rehabilitation clinic, associated with a large hospital, consisting of 40 male and female chronic psychiatric outpatients. In this study, participants were asked to volunteer for a 12-week monitoring program. A typical exercise session consisted of exercising on a bicycle ergometer 4 days/week for a duration of 30 min/session, at 64–75% of heart rate reserve. Participants wore heart monitors, and every 3 weeks aerobic fitness was determined by a submaximal predicted oxygen test (MVO_2). Using a single-subject case study design, results were reported for 3 individuals suffering from schizophrenia. For all 3 participants there was a general trend of reduced depression, increased general well-being, and improved aerobic fitness as measured by the Beck Depression Inventory, Mental Health Inventory, and predicted MVO_2 scores. Similarly, the single-subject case studies all reported subjects' expressing positive views of exercise. Antidepressant, mood-elevating effects, moderate anxiety-reducing effects, increased self-esteem, increased energy, and improved concentration were some of the effects that participants described.

Of particular interest was the effect of exercise in fostering social interaction as measured by subjective comments of the individuals. A primary goal of the exercise program was integration: helping participants to develop the necessary skills, knowledge, and exercise network necessary to gain access to local facilities and organizations on leaving the clinic. According to Pelham and Campagna (1991), this allows the participant to "move from solitude, one to one interaction, or homogeneous groups to heterogeneous groups (i.e., participating in activities with the general population)" (p. 166). They concluded that while some of the psychological and social disabilities experienced were not inevitable consequences of the underlying illness, "exercise liberates the individual from these psychological and social obstacles by fostering non-demanding behavior in a process of socialization and identification with the general population" (p. 167).

In conclusion, Plante (1993), reviewed the use of aerobic exercise in the prevention and treatment of psychopathology and suggested that exercise may be helpful to psychotic patients experiencing anxiety, depression, and/or low self-esteem by alleviating those conditions rather than helping reduce thought disorder *per se*. Any such benefits would greatly improve the quality of life of those taking part in an exercise program.

However, the evidence on the relationship between exercise and mental health in psychotic disorders is particularly weak due to the limited number of studies

reaching a "satisfactory level of scientific rigor" (Martinsen & Stephens, 1994, p. 65). Despite this lack of "evidence," there is still a great need for simple strategies that individuals may adopt, on their own or with guidance from mental health workers, to provide productive coping strategies for their mental problems (Martinsen & Stephens). Exercise appears to be one such strategy that could bridge the gap between the use of antipsychotic drugs and the need of individuals with schizophrenia to take a proactive approach to their own welfare and rehabilitation. Given the lack of "scientific" evidence linking exercise and psychological benefits for this population, should we ignore the possibilities? Or should we try our best to report what we find when working with such individuals, using any of the methodological tools and paradigmatic positions at our disposal and disposition, in order to slowly unravel "conclusive" evidence through the steady but seemingly inexorable rise of successful "cases" or "exemplars"?

If the advantages of the traditional "experimental" approach are assumed, there is a certain irony that other forms of research have not been more influentially employed for examining the areas that traditional quantitative designs have difficulty in examining, particularly when considering the exercise and mental health relationship. In a far from exhaustive list, we are first faced with the likelihood that the effects of exercise are a very individual experience, with each "exerciser" likely relying on a unique exercise formula for maximum psychological benefit (Fox, 1994). As a consequence, randomized control studies, which are often seen as the ideal research design, are problematic in that participants who are allocated to their nonpreferred treatment are more likely not to experience great psychological benefit as a result and drop out. This differential attrition introduces a nonrandom element into the design, and those who complete an exercise program may be atypically receptive, which reduces the generalizability of findings (Roth & Parry, 1997).

Second, for special populations such as clinical populations, where the number of studies is often limited, such a problem reaches new levels of complexity. For example, given the heterogeneity of schizophrenia and the often vastly differing individual pharmacological interventions, ascertaining base levels or generalizing results is always tenuous. Third, purity of diagnosis in the clinical setting is also confused by comorbidity, further making comparison and generalization difficult (Roth & Parry, 1997). Fourth, the variety of responses to withdrawal from drugs and the small number of patients available at any one time makes experimental work difficult (Mutrie, 1997). Finally, self-report inventories for psychotic patients are not believed to be reliable (Martinsen, 1995). Such limitations are implicitly recognized in the literature by the apparent dearth of material in comparison to other more "popular" and possibly less troublesome groups or participants such as those in nonclinical or "free-living" populations. This results in populations such as individuals with schizophrenia being silenced and marginalized by the pursuit of what are perceived to be safer and more familiar topics that rely on the use of an empirical methodology (Berger, 1996).

In view of the problems we have identified regarding research with special populations, we suggest that ethnographic studies, which usually include intensive, long-term observation and participation in the natural setting, in conjunction sometimes with the more familiar technique of interviewing (Sparkes, 1992), have much to offer.

The Ethnography of a Hostel

In order to develop our understanding of the influence of exercise on the lives of a small number of individuals with schizophrenia, an ethnographic study drawing on the principles outlined by Hammersley and Atkinson (1995) and Wolcott (1995) was conducted using one inner-city London hostel. This hostel provided shared housing accommodation for 21 people with a history of homelessness, exacerbated by mental illness. It is well equipped to give residents the experience of semi-independent sharing without the complete removal of support. The hostel is made up of four terraced houses that have been refurbished to provide an 11-bed hostel with two 5-bed shared houses. At present, the shared houses are occupied by residents who are more independent, while the central hostel is used by residents with greater support needs.

As the principal field-worker, my (Guy Faulkner's) first awareness of the hostel was through a friend who was employed there as a key-worker. I then approached the assistant manager of the hostel to discuss the possibility of presenting a talk to the staff on the topic of "exercise as therapy," and to explore with him the possibilities of developing an exercise program with some of the residents. The presentation was received enthusiastically by the staff. Questions were asked and a lively discussion ensued. One issue that arose was the extent of my access to the residents' case files. It was agreed that I would have access to each resident's diagnostic sheet, which provided the resident's mental health classification along with brief details of his or her history prior to arriving at the hostel. Subsequently, I was invited to give a talk to the residents on the benefits of exercise and the exercise program I intended to set up the following summer.

Shortly after giving these talks, I gained employment at the hostel as a locum care worker. This meant that when a full-time care worker was sick or attending a course, a replacement would be called in for the day. On this basis, I was able to spend at least 3 days per week, for 17 weeks, working in the hostel in the role of participant-observer. The first 6 weeks were used to gain insights into the rules, regulations, and rituals that framed life in the hostel and to develop relationships with the residents. At the same time, I operated a low-key "marketing" plan in order to "sell" the idea of exercise to the residents. In between making cups of tea, stocking the kitchen, chatting with people, cleaning, and various odd jobs, I would mention the exercise program, discussing the benefits and what was involved. We put flyers on walls and delivered leaflets individually to each room, and key-workers also recommended to the residents that they participate in the exercise program.

Procedure

During this period of familiarization, events, discussions, and observations were recorded in a field diary. At the end of each day I used these details to encourage my own systematic reflection as to the meanings and themes that were emerging from this data source. This process was carried out from first entering the hostel, throughout the exercise program, and to the final interviews after stopping the program. The field diary, as a reflexive resource for "making notes on notes" enabled the coupling of the emerging analysis with the observations throughout the study, and assisted me in remaining attentive to my own processes as a "researcher as instrument" (see Hammersley & Atkinson, 1995; Wolcott, 1995).

In acknowledging the role of the "researcher as instrument," much has been made of the need to be self-reflexive in analyzing the "baggage" the researcher inevitably carries in terms of social categories such as race, ethnicity, social class, gender, age, and sexual orientation (Sparkes, 1995). More important, however, is the need to make explicit why any particular researcher is researching any particular problem. Whose interest is being served (Glucksman, 1994), and whose reality is being validated (Acker, Barry, & Esseveld, 1983)? Such information informs the reader more illustratively of any potential sets of interests that the researcher takes into the study that may or may not later be confirmed by immersion in the setting.

My own interest in this area was informed by a shared interest in psychology and sport, personal observation of the sedentary lifestyles of many clients in the mental health field, anecdotal evidence of the psychological benefits of exercise, a review of the relevant literature, and personal experience of those psychological benefits. While sharing such information with the reader, it is sensible to consider the caution expressed by Janesick (1994), who used the term *methodolatry* to describe the preoccupation with method to the exclusion of the actual substance of the story. While acknowledging the process of the research, we must not lose sight of the product.

As a locum care worker, I spent the majority of my time with the residents of the central hostel. This meant that these residents received the most encouragement possible to participate in the exercise program. Of the four residents of the central hostel, three residents agreed to take part. Joanne, Barry, and Jack (all pseudonyms) were middle-aged residents with schizophrenia. All had a long history of institutionalization and mental illness, were receiving antipsychotic medication, and lived a sedentary lifestyle.¹ Following the Health Education Authority's (1995) recommendation of moving to a more flexible, less vigorous approach to exercise prescription, these 3 residents participated in a 10-week exercise program that consisted of twice-weekly sessions of 30 min of continuous moderate activity. Walking in nearby parks and swimming at the local leisure center were the activities chosen by Joanne, Barry, and Jack. Scheduled sessions were led by me in the late afternoon.

The 3 participants were interviewed at the beginning of the program to gauge their attitudes toward and perceptions of exercise, as well as to gain information regarding their exercise history. At the end of the program, they were interviewed again with the principle aim of discovering their perceptions on whether exercise was beneficial. Interviews were also conducted with the participants' key-workers to explore their opinions on the effects of the exercise program on the behavior of participants. The interviews revolved around a list of open-ended questions that were flexible enough to allow for probing unexpected responses and further exploring pertinent issues as they arose. Throughout, an attempt was made to develop a situation in which the interview was defined as a guided conversation with a purpose.

The audiotaped interviews were transcribed and then read extensively in order to pinpoint the most prominent aspects of the respondents' experience. Inductive analysis was used to identify, code, and organize themes arising from the raw data, with quotations serving as units of analysis (Coffey & Atkinson,

¹Qualitative research is most effectively presented within a rich narrative (Maykut & Morehouse, 1994). Considerable time was spent "on site" in this study, reporting observations of participants in their natural setting, using data drawn from multiple sources in describing the research process and each "participant" or "case" and their experience of the exercise program in detail. By necessity, the description of these aspects is briefer. Further information can be provided by the first author on request.

1996; Maykut & Morehouse, 1994). Thematic analysis was then used to cross-reference between individuals' statements and observations of pertinent exercise effects. Triangulation of information sources was used to build a convincing argument as to the possibilities of exercise as therapy and to assist the development of "plausible interpretations" from the data (Wolcott, 1994). At each stage of the analysis, findings were shared and discussed with Andrew Sparkes as a "critical friend" in order to develop the cyclic process of interpretation and to develop notions of authenticity, fidelity, and believability (Blumenfeld-Jones, 1995; Manning, 1997; Sparkes, 1998).

Given the exploratory nature of our project and small sample, our intentions for this paper are modest. We recognize that based on the data presented, any attempts by us to generalize the findings in relation to the psychological benefits of exercise to individuals with schizophrenia in the same hostel or in other hostels would be inappropriate. Having said this, we are reminded of Wolcott's (1995) view that we must attempt to learn all we can from studying only one of anything. Furthermore, Sears (1992) commented,

The power of qualitative data, however, lies not in the number of people interviewed but in the researcher's ability to know well a few people in their cultural contexts. The test of qualitative inquiry is not the unearthing of a seemingly endless multitude of unique individuals but illuminating the lives of a few well chosen individuals. The ideographic often provides greater insight than the nomothetic. (p. 148)

As such, the data presented of the three participants are offered as a rich resource and intended to be illuminative rather than definitive. We will focus on the impact of exercise on their lives, how exercise influenced their mental health, and the possible underlying mechanisms that produced any positive changes. In seeking plausible interpretations from the data, it needs to be recognized that, 9 weeks into the program, one participant, Jack, discontinued participation. I was unable to interview him, but from observations and interviews with staff, the exercise program was deemed not to have had any discernible effect on his mental health. Despite this, limited encouragement can be drawn from his increase in physical activity after being previously sedentary. In stark comparison, both Barry and Joanne thought the exercise was very beneficial; they reported in the interviews and the exercise sessions antidepressant, mood-elevating effects, moderate anxiety-reducing effects, increased self-esteem, increased energy, and improved concentration. Their experiences, as well as Jack's, will be put into context by first considering the impact of the exercise program. Suggestions as to why these changes occurred will then be offered before we consider the implications of using exercise programs as partial therapy for schizophrenia.

Results: The Impact of Exercise

The Voices

Yagi, Kinoshita, and Kanba (1992) highlighted the use of exercise as a coping strategy for schizophrenics recovering from an acute psychotic state. Pelham and Campagna (1991) also report one participant being "less bothered by

unimportant thoughts, anxiety provoking thoughts, images or pictures" (p. 161). Whether this refers to psychotic symptoms is unclear, but reports from Barry and Joanne question the claim by Plante (1993) that exercise would not be helpful in reducing thought disorder. Joanne best articulated the role of exercise as a coping strategy:

I'm always hearing voices, dilemmas, and dramas inside my head. Like today I saw my daughter at school, and I told her to stop doing something, and she didn't listen. And because she didn't listen, she said Why do I have to listen to you, I thought the head teacher stabbed her. And I thought my mum told me Why did you stab her. I said I didn't stab her, it was the teacher. She goes You're a liar, you stabbed her. I was calling her all the names under the sun. And I said If you want to believe I stabbed her you can, and she appeared in the garden, hit me, and beat me up and everything, and I hit her back, and then she hit me again, and all those things that I was thinking, dramas like that, they cleared off when I went swimming and walking. I didn't have time to think of anything silly. I knew I was doing something constructive.

Here, it is important to consider the role of institutionalization in the lives of these residents, as they would have experienced many diagnostic sessions with psychiatrists or counselors and would know what characterizes "normal" behavior. They are fully aware that the "voices" are a symptom of schizophrenia, and their absence may indicate a good response to anyone questioning their presence. The triangulation of data utilizing the field diary and interview transcripts of participants and care workers provided evidence that exercise participation influenced such an effect. Throughout the exercise program I was naturally interested in this aspect but did not discuss the "voices" at any time with the group. That Joanne and Barry self-reported this benefit of exercise without any prompting seems to suggest evidence for such a benefit. Key-workers also commented that the participants reported fewer voices to them on days when they exercised. Finally, interviewing them at the conclusion of the program provided further insight into this benefit.

Guy Faulkner: Did you hear voices [during an exercise session]?

Barry: Yeah, a bit before I went, and then when I came back they used to be all gone like, you know, 'cause of the exercise, especially the walking, you know, it seemed to take a lot of the stress away, you know.

Such a benefit would last approximately 2 to 3 hr after each exercise session.

Sleep Patterns

The participants all had irregular sleeping patterns, with Barry in particular sleeping all day and staying up during the night. This would often be a result of the antipsychotic drugs that would cause sluggishness and drowsiness. Also, by sleeping during the day, it was possible to avoid contact with other residents and any potential conflict. However, as Pelham and Campagna (1991) mention, such poor sleeping patterns only reinforce the secondary dysfunctions of schizophrenia, such as social withdrawal and reclusiveness. The exercise program actually helped

improve Joanne and Barry's sleeping patterns during the exercise program as reported by participants and their key-workers. Joanne believed that she slept better after exercising but was not sure why: "I don't know, my whole body seemed to appreciate it more 'cause I did some exercise. My whole body would. . . I could appreciate myself more because I did some exercise."

For Barry, the exercise session was an important and enjoyable appointment that had to be kept. Consequently, Barry went to bed at a reasonable time to ensure that he could get up the next day to exercise:

Just the fact of getting up, you know, it helps, the motivation for getting up. At least you've got something little bit to look forward to. It's not going to be another day of cigarettes, and reading and television, and the usual bla, bla, bla bullshit that everyone gets thrown at everyday.

This was the first time in "two to three years" that Barry got up consistently during the day, according to the manager of the hostel.

Behavior

It was with Barry that I saw the most discernible behavioral changes during the exercise sessions. According to his key-worker, Barry always had a problem with his personal hygiene and took little interest in his personal appearance. This suddenly changed midway through the program, as he ventured outside of the hostel and interactions with the public became more likely. More dramatic changes were also taking place in other aspects of his life. Interviewing the assistant manager of the hostel revealed changes in his behavior of which I was unaware:

His mood seemed to improve. I thought he was much more approachable. . . . Also much more reflective about what was happening in his life, about what was going on. Certainly during that period of the exercise sessions there were more changes with Barry than any other resident. He approached his key-worker about doing some counseling, which is something that Barry has never done before. . . . He took more responsibility for finding out what was physically wrong with himself, which is when he found out about his diabetes, which is something that Barry has always known, that something's wrong. And I think it has always terrified him, and he's found it very difficult to organize something himself. In the past, [others] had to do it for him, but Barry did everything for himself this time. He made his own GP [general practitioner] appointment and stuff. Started to wash his clothes a lot more. He opened up a bank account, which he's never ever done before.

Barry was also aware that the exercise program had helped in other aspects of his life, although he was less articulate: "Yeah, it helped me to get out a bit more, you know, face up to things, face up to life a bit more in general."

Likewise, Joanne's key-worker also found a marked difference in her behavior on days when she exercised:

There have been incidents in the [incident] book that tends to relate to when she hasn't done any exercise. She's less likely to sleep, more likely to be

disturbed if she hasn't done any exercise during the day. Her day is not occupied, she doesn't have any activity. So there is quite a lot of change. Her mood is much better, because she has something to talk about. She's elated, she's done something, she's feeling pleased with herself. On other occasions, she's bored, she doesn't have anything else to do, she tends to be more stressed, more anxious. Yes, there is quite a marked difference.

Chamove (1986), relying on nurses' ratings, first identified significant improvements in the behavior of people with schizophrenia on days they exercised. The extent to which Barry's behavior changed was nothing short of astonishing to the key-workers at the hostel, and to Barry's key-worker in particular: "It is the first thing I have ever seen Barry stick to so religiously. I have never seen him stick to anything like that."

Possible Reasons for Change

Distraction

The exercise program provided those participating with an opportunity to leave the "shithole," as Barry so eloquently put it, and do something different. Bahrke and Morgan's (1978) distraction theory seems particularly apt for a clinical population. Indeed, all of the key-workers cited distraction as the main cause of the benefits seen. It seems reasonable to suggest that exercise could direct attention away from the "voices" due to the exertion required. For example, Barry believed that a time-out from the hostel was enough to produce such results: "I'm not sure, you know, maybe it's just being out away from the hostel. The pressures you come under sometimes, being able to get away from it all for half an hour or hour is quite a pleasant change." Likewise, Joanne also inferred distraction when considering her thoughts during exercise: "Just the pleasure, really, just it being a pleasure, just it being a real pleasure 'cause it was a change from the routine, and it was a change of scenery, and using my muscles again. so it's alright."

Given the change of scenery, could this account for the sudden change in Barry's behavior? As mentioned, the exercise sessions ensured that Barry went to bed early the night before so he was ready to take part. This gave him time during the day, which he never had previously, to make appointments with his general practitioner, or open a bank account. The assistant manager of the hostel also thought that the exercise gave participants a "clearer head" to look at their lives:

I think that if people are physically fitter and have more energy from the physical benefits, then it is easier to cope with stress, it's easier to cope with anxiety . . . and it is easier for people to have a clear head to be more reflective about what is happening in their lives. So they can kind of like physically, you know, almost detoxify themselves. And when they are physically better it is easier to focus on something.

Changes in physical fitness were unlikely to occur in such an exercise program. However, if the exertion of exercise dulled the "voices," and the process of getting away from the hostel also cleared their heads of the "baggage" involved in

being mentally ill, then it would appear likely that Barry could be more self-reflective and make decisions about his welfare.

In contrast, for Jack there was no such effect. Whenever Jack came out of the hostel the "voices" would suddenly multiply. Whether he was just seeking attention from me or he genuinely felt more comfortable in the hostel was impossible to determine. As Prochaska and DiClemente (1982) have shown with the stages of behavior change, Jack was languishing in his own particular form of precontemplative stage. As Jack's key-worker commented,

He doesn't want it. Jack doesn't want to get better. He's not interested in getting better, because if he got better, Jack would have to go out and do his own thing, he wouldn't have a supportive environment like this. I'm convinced that Jack doesn't want to get better, and I've seen that in his actions in the past, so you're not going to distract him. He's actually quite good at not being distracted. He's been in care for years and years . . . so Jack has never, ever had to stand on his own two feet, and getting better would mean that, so he won't.

As one key-worker remarked, it depends on your "agenda" as to what exactly can be derived from exercising. For Jack, it would appear that I was just another "ear to bend" and an alternative counseling opportunity. The major advantage of the exercise, distraction, was unmet.

Social Interaction

In this study, it was possible to investigate how social influence aided compliance and adherence, and the particular ways that social influence manifested itself within this group. Joanne had recently arrived at the hostel, so the exercise program was a good way for her to "get to know the boys better" after previously staying at an all-women hostel. As her key-worker stated,

Joanne is quite lonely, and she always talks of having relationships with people, and there are concerns about boundaries with her and men. So I think it's just a comforting thing for her having men around her, that sort of bonding.

Perhaps for Joanne, who has a history of dysfunctional relationships with men, exercising with a group of men in a nonthreatening atmosphere was therapeutic in itself. Barry also enjoyed the social interaction involved in the exercise program, and in particular those associated with swimming sessions. As his key-worker commented,

Swimming can be a very intimate thing, and I think that was very brave of Barry to do that. But I also think that it helped because you were male. And I think Barry is a bit confused about his sexuality, so I think it was quite exciting for him. But I think he's discovering his body and it's exciting for him, you know, it might be on the level that a baby discovers his body, and that process was quite positive for him.

Given that the key-workers were never present at the exercise sessions, the implication made by this key-worker about Barry's use of these sessions to work through a "confused sexuality" is acknowledged but treated with suspicion. What is clear is that, in my role as care worker, I was seen as a "friend" by Barry, as someone who exercised with him and treated him in a nonjudgmental manner. Not being a key-worker meant that I did not have to be "nagging" Barry at times to discuss and confront his "problems." Indeed, as his key-worker later went on to point out, it was very important for Barry to "connect" with people, and he found exercise to be an avenue to "connect" with me and Joanne and Jack.

Pelham and Campagna (1991) discussed the role of exercise in fostering social interaction for people with schizophrenia, and this certainly happened in this study. While interaction with the community was limited, the exercise program provided a forum for social interaction within the group. This interaction helped direct participants away from continuous introspection throughout the day toward a concern with day-to-day events and the development of active and friendly peer relationships (Pakes & Pakes, 1982), which is an important step in the rehabilitation process. The assistant manager of the hostel also talked about "connection" and the difficulty of fostering this within the hostel:

Isolation is one of the biggest factors. . . . And when people are ill, most people will say that they do feel socially isolated and isolated from other people, so if they are in a format where they can have social interaction and connect with the people and talk to other people and be responded to . . . that all helps, that all makes a huge difference.

When people are well, they go out into the community and take part in activities. For the participants, they gained confidence by participating in a "normal" activity on a "regular" basis, which served to reintegrate them into society, albeit for a period of only 10 weeks.

Ojanen (1994) argued that the real effects of exercise on mental health cannot be studied. He believed that every attempt to study exercise arouses placebo factors such as expectations, involvement, and subjective utility, which have an effect on the "psychological criteria." With respect to the current study, the friendship developed between the participants and myself helped with adherence and compliance to exercise, as well as with cognitions and attitudes about exercise. The friendship that developed and, speculatively, Barry's possible sexual interest in me, and perhaps Joanne's seeing me as a potential suitor may have produced the positive changes reported by them. Perhaps they wanted to impress me by continuing to exercise and telling me what they thought I wanted to hear. More realistically, the fact that I was a "normal" person showing interest in their health and taking them exercising is likely to have positively influenced their experience. Instead of taking a defensive position as to the real effects of exercise on these participants using triangulated data supplied by the key-workers, it is important to recognize that, as Carron, Hausenblas, and Mack (1996) have argued inadvertently, one cannot separate the social factors from the exercise itself. Furthermore, for schizophrenic individuals, these social factors created by the exercise program play an important role in the rehabilitation process. As Fox (1994) has argued, it is the process of exercising, with all that it entails, and not necessarily just the exercise itself, that contributes to the psychological benefits accrued.

Self-Esteem

Fox (1994) discusses three mechanisms behind enhanced self-esteem: improved body image, sense of mastery and achievement, and control and empowerment. For Joanne, self-esteem was tightly linked to her body image. Anything that could help her lose weight would increase her self-esteem. However, this was a double-edged sword in many ways:

I want to lose weight. I don't like being fat. I've never liked being fat. I tried to commit suicide when I was young 'cause I was so fat. I thought everybody was calling me names. Well, I think I'd feel a lot better, 'cause I notice when I lose weight, I hear less voices, and I'm less distressed, and I just feel better. . . . When I'm smaller, I hear less voices. When I was a size 10, before I got raped, ummm, I was a size 10 and I didn't hear any voices at all.

In the above comment, Joanne associates the onset of schizophrenia with her increase in weight. She now believes that if she could get down to that magical size 10, then her problems would disappear. Her weight has become a yardstick for her recovery, which causes problems when her weight fluctuates. However, the process of exercising resulted in her thinking that by participating she would lose weight and so improve her body image. This perception played a part in her enjoying the exercise and benefiting from it psychologically. As she once remarked on a walk, "I don't feel fat anymore. I must have lost 1 or 2 inches." The feelings of enhanced body image were transitory due to other factors in her life, particularly her eating habits. For example, Joanne often reported hearing voices that told her to eat more or "they" would kill her. This does not deflect from the fact that exercise gives her some form of comfort and perceived control of her weight.

While Barry was never satisfied with his body, he certainly became more comfortable with it. His sense of enhanced body image was associated with greater feelings of control. As Barry's key-worker commented,

Having a positive experience about his body was also, I think, very new to him. . . . And I think it gave him a tremendous amount of confidence that he could go for a swim, he could go for a walk and stuff, and that his weight was not going to be an issue, or his problems with incontinence. It didn't come into it, you know, it was all O.K.

During the exercise program, the midway point in the change from walking to swimming roughly coincided with the changes in Barry's behavior. Going swimming and finding out that no one was laughing at him, or indeed staring at him, greatly increased his confidence. As with Joanne, Barry was doing something positive about his weight, which was in itself both a distraction and empowering:

Well, it got me out, for a start. Something new, something I hadn't done in a long time. And I felt better for it, felt I benefited from it a bit, you know. I felt a bit more mobile, getting around in general seemed to be a bit easier. . . . I felt a bit self-stimulated, a bit proud of myself. I was actually doing something that was worthwhile and slightly constructive.

For Barry, changes in self-esteem were particularly due to "escaping" from the hostel and doing something that he perceived to be useful while others sat around and watched television. Barry reported not to have participated in any formal exercise since 1975.

One aspect of the program that was loosely employed involved goal setting. A sense of achievement was gained through beating set goals, and both Joanne and Barry also felt some achievement in turning up consistently to exercise. For example, according to Joanne's key-worker,

Joanne's done some activity for the day. Also, she really feels quite pleased with herself. She's got so far, done so much, she's really pleased for herself. You're always acknowledging that, and her confidence has been built up by that.

While this might seem a small achievement, it needs to be countered with the fact that there is little room for achievement in other areas of their lives.

As Fox (1994) concluded, it is clear that these psychosocial mechanisms operate concurrently and are interrelated. We suggest, however, that for a schizophrenic population, it is the distraction that is paramount to any psychological gains. They are diverted from the "voices" by the distracting process of exertion, and from the problems and problem behavior of others back at the hostel. This diversion then allows the positive effects of sociability and enhanced self-esteem to take root.

Discussion and Recommendations

Guy Faulkner: So given all those pluses, what provision is there for an exercise program at [the hostel] or [the charity] in general?

Assistant Manager: We don't . . . I think it is just that people forget about it [exercise]. It is one of those things that people just forget about. It gets taken for granted.

The most ironic aspect of the study was listening to key-workers and the manager expound on the benefits that the exercise program had brought to the participants, then openly admit that there were no plans to continue the exercise with those participants or consider introducing exercise in the future.

For Barry, the exercise program had been an almost revelatory experience. Merely getting out of the hostel had been a factor in the program's success. The exercise had improved his life in many ways: physically, mentally, and behaviorally. It was with much regret that we noted a gradual deterioration in the gains that Barry had made once I had stopped the program. This was also sad given Barry's wish for me to continue exercising with him. The assistant manager could not help noticing his decline, as her following comment indicated:

After the exercise stopped he became a bit more agitated, and Barry has always had a problem with his anger, and controlling his anger so things do get to him a bit more now. He kind of goes through peaks and troughs. His sleeping pattern is not as regulated as it used to be [during the exercise pro-

gram]. It's not as bad as it was before, but it's slipped. And he's still improved about taking responsibility for himself, but he does find it, his energy is not the same and he's sort of. . . . And the thing that I noticed that he's really gone back to, really, is his anger. And he's had a few interactions with the cook—basically, he's hit her. I certainly noticed when he was exercising that he didn't have that negative energy as much. He got it out of his system. But that seems to have gone back to the way he was before.

Barry has gone back to prowling the hostel at night and sleeping through the day. According to the assistant manager, Joanne's decline was even more dramatic:

Her voices and hallucinations got much worse when it [the exercise program] stopped. I would say then definitely, because she had a few points before Christmas where she had difficulty. And the reason why she was admitted [to the hospital] in the first week of January, she just became really deluded. She started talking about knives and stabbing people.

Joanne was also left to her own devices, culminating in a breakdown and voluntary admission to the hospital. An examination of records in the incident book at the hostel showed a gradual deterioration 2 weeks after stopping the exercise program. The "voices" became more terrifying and incessant, and the coping strategy that had been successful in the past, exercise, was no longer utilized.

It was after these deteriorations that we considered that the participants had developed some form of exercise dependency. As there can be a rebound of schizophrenic symptoms to a higher level on the withdrawal of antipsychotic drugs (Warner, 1987), did the same thing happen with the withdrawal of exercise? Having gone exercising twice a week for 10 weeks and then become sedentary again, could this have provoked greater negative responses than if there had been no exercise at all? This may be exacerbated by the fact that I had become a "friend" who then suddenly vanished. It was an ethical dilemma that I tried to solve by convincing their respective key-workers to continue some form of exercise with Joanne and Barry. Barry was particularly disappointed that I would no longer be coming in. Whether the cessation of my participation in their lives contributed to the increase in Barry's anger or to Joanne's admission to the hospital is still an unresolved and problematic issue to us and raises a number of important ethical dilemmas related to this form of inquiry.²

According to Li (1981), a debilitating secondary symptom of schizophrenia is withdrawal, "a process in which persons retreat from relationships and contacts with the external world into a world of their own . . . a defense against the anxiety related to perceived increased threat or stress" (p.45). The withdrawal process is also exacerbated by antipsychotic drug side effects, and social relations and external

²Due to the inherent nature of qualitative research, particularly ethnography, the researcher is often continually dealing with ethical dilemmas (Punch, 1994). For example, issues of friendship, representation, the "researcher as therapist," and his or her ultimate "withdrawal from the field," are issues that will be discussed in a future publication by the authors. Sparkes (1994) has discussed similar issues with regard to the relationships developed in life history research.

perceptions are often eliminated. Activity becomes one way of treating this withdrawal by stimulating interest in the external world, resulting in an increase in motivation and purposeful action (Li, 1981; Chamove, 1986). Activity importantly provides a redirection from symptoms and problems toward the world of reality (Pakes & Pakes, 1982).

For 2 of the 3 participants this proved to be the case, with this new external social world created by the exercise program playing an important role. As stated earlier, exercise must be seen as necessary at two levels: first, at the physical level in moving a sedentary population to a more active level (Killoran, 1995), and second, for the psychological advantages that may ensue. As Chamove (1986); Pelham and Campagna (1991); Skrinar, Unger, Hutchison, and Faigenbaum (1992); and our own study have shown, there is mounting evidence that exercise can be a productive means of coping with the secondary symptoms of schizophrenia, such as depression, low self-esteem, and social withdrawal, as well as possibly the psychotic symptoms of the all-pervading "voices" for some individuals. By alleviating these symptoms, quality of life for someone with schizophrenia can be drastically improved, with the proviso being that exercise is maintained. Consequently, a worthy case can be made that exercise should be included in a resident's care plan and become a priority item in the routine of schizophrenic residents.

Both Barry and Joanne stopped exercising immediately after finishing the program. There has been little research on the reinforcing and motivating influence of the discussed psychological changes during and after exercise (Smith & Biddle, 1995). The psychological benefits experienced by Joanne and Barry were reinforcing. However, a more powerful reinforcer, social influence, was the key to understanding their problems in exercising by themselves. With such a population, a lack of confidence is one of the biggest obstacles. Confidence to leave the hostel and exercise by oneself, after being subject to years of abuse and harassment because of their experiences of living with schizophrenia, is limited. Indeed, leaving the hostel by oneself can be a frightening experience. Similarly, confidence to ask a fellow resident to go exercising does not come easily for those whose social skills are already restricted. Social support becomes paramount. As Barry commented,

I need someone to push me. I don't think I could ever do it on my own bat. I think I need somebody to give me that little push, to make sure that I do it, you know. . . . It's just having that person there to say, a member of staff or someone saying, go out and do it and do yourself some good.

Both Barry and Joanne expressed an interest in exercising to other members of the staff, although, as the assistant manager pointed out, "nothing was done about it, unfortunately." In exploring the possibility of key-workers providing exercise opportunities for residents, the most often-cited barrier was a lack of time. Key-workers complained of an overload of administrative duties. As indicative of the comments made by the staff, the assistant manager believed that "staff just get bogged down. They just get bogged down, and it is difficult to get back to the basics, or get back to the grassroots of what you are doing with people, and what benefits people."

While all the staff interviewed thought an exercise program would be very beneficial to the residents, Joanne's key-worker was the only one who actually did

take her assigned resident out exercising occasionally. Having worked at the hostel, I observed firsthand the heavy administrative load on the staff, organizing DSS (Department of Social Services) payments, liaising with social workers, going on ward rounds to visit residents who had been admitted to hospital, and so on. Due to these time constraints the promotion of proactive strategies or therapies that residents can adopt for themselves would appear to be even more pressing. This is particularly true, given that exercise is one form of therapy that is cost-effective and easy to administer, in ways that can serve as an adjunct to traditional forms of rehabilitation (Pelham & Campagna, 1991). However, it needs to be part of the organization's philosophy and ethos for it to be effective. If policies direct either key-workers to include exercise as a daily activity or the hostel to provide some form of exercise program to residents as a whole, then greater flexibility in time management can be encouraged.

The findings from our study lead us to believe that it is crucial to encourage the acceptance of exercise as a necessary part of a resident's care plan among management and staff at hostels for the mentally ill. This is likely to be a slow process since, as Berger (1996) noted, the medical establishment as represented by psychiatrists is slow to change standard therapeutic approaches. However, with staff coming from varying backgrounds and holding differing beliefs as to the most effective treatment for residents, we would argue that there is a simple strategy that transcends all traditional therapy. Increasing the quality of life of people with schizophrenia is paramount, and the opportunity for consistent and structured exercise experiences will encourage this goal, while serving to complement any other therapy considered. We hope that future research will extend the exploration of the use of exercise as an adjunct treatment and assess organizational effectiveness in encouraging a sustained increase in the physical activity of residents.

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