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Research Letter

Promoting exercise in patients with depression: lessons learned from a brief educational intervention

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KEY MESSAGE:

- Patients with a depression have wide ranging preferences, beliefs and sometimes misconceptions on exercise.
- Health care professionals should explore these beliefs to promote exercise in a patient-centred way.
- To support changes in physical activity, advice should be promoted in a positive way, with persistent encouragement over time.

ABSTRACT

Introduction: Depression is a leading cause of disability worldwide. It is recommended that exercise is incorporated into the management of patients with depression, but it is not clear how best to implement this recommendation in clinical practice.

Objective: The objective of this study was to evaluate a pragmatic educational intervention promoting exercise to a group of patients diagnosed with depression, in a community setting.

Methods: Participants were convenience sampled from community based psychiatry clinics. WHO 5 Wellbeing and International Physical Activity Questionnaire scores were measured for each participant at baseline, and again three months after receiving the educational intervention on exercise. Open ended questions were used to elicit participants' beliefs and barriers to exercise and responses were thematically analysed.

Results: Thirty-five patients with depression were enrolled. Three months after the educational intervention, there were no significant changes in patients' activity levels or well-being scores ($P > 0.05$). Participants' responses to open ended questions revealed their varied, and often contradictory, beliefs on physical activity and exercise. Following from this, their suggestions on ways to improve the uptake of exercise advice highlighted the need for an individualized approach, with persistent patient encouragement and positive reinforcement.

Conclusion: This study has generated valuable information on how to improve the promotion of exercise to patients with depression. Advice framed in a positive light, with persistent encouragement and tailoring to individual circumstances, is desired by patients to support their behavioural change.

Keywords: family medicine, depression, patient involvement, qualitative methodology

INTRODUCTION

Depression is the fourth leading cause of disability worldwide (1). It is recommended that exercise is incorporated into the management of patients with mild to moderate depression, but it is unclear how best to implement this recommendation in clinical practice (2,3). Many patients equate exercise with high intensity, sporting activities. However, national guidelines emphasize the role of non-sport activities, such

as dancing and gardening, for people trying to become more active (4).

The aim of this study was to evaluate an initiative designed to improve physical activity levels in a group of patients diagnosed with depression in a community setting. A pragmatic intervention involving education and advice was used. The intervention was evaluated using quantitative and qualitative methods, to obtain information that would allow refinements in subsequent phases.

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METHODS

Study design

An educational intervention promoting exercise to patients with depression was evaluated using a quantitative (change in activity and well-being scores before and after) and qualitative (open-ended questions) approach.

Selection of participants

The study was conducted in community based psychiatry clinics, serving the predominantly rural North Kilkenny area (catchment population 40 000). The clinical team included a consultant psychiatrist (MM), a GP registrar (CS) and a community nurse. Consecutive patients with an established diagnosis of depression were invited to participate by the clinical team while attending their routine appointment between August and October 2010. Patients were not enrolled if they had psychotic disease, cognitive impairment, physical disability, pregnancy, or were under 18 years.

Intervention

After giving written consent, participants were given individual advice on the merits of exercise for their physical and psychological health, recommendations on the amount of exercise they should get each week, and a variety of sport and non-sport options for attaining these levels. The discussion was based on the Irish National Guidelines for Physical Activity and the information leaflet provided was reproduced from these guidelines (4).

Measurements

Participant's completed the World Health Organisation Five Well-Being Index (WHO-5) and the short version International Physical Activity Questionnaire (IPAQ) at enrolment and again after three months. The WHO-5 is a validated tool that measures sense of well-being over five psychological domains, such as positive mood and vitality. The maximum score is 25; a score of 13 or less indicates poor well-being (5).

The IPAQ is a validated tool that uses questions on the intensity and duration of one's physical activities over the preceding seven days to calculate estimated physical activity in metabolic equivalents (METs) minutes per week (6,7). The recommended amount of physical activity is 600 MET minutes/week (4).

Open ended questions were used before and after the intervention to elicit patients' perceptions of exercise, their opinions on the advice given, the barriers they experienced in increasing activity levels and their suggestions on ways to address these barriers (Appendix 1). Follow-up questionnaires were given to participants at their return clinic visits. If they did not attend,

the questionnaire was mailed to them with a stamped return envelope.

Analysis

Quantitative data was entered into Stata IC 12 for statistical analysis.

Responses to the open-ended questions were thematically analysed. This process involves familiarization with the data, generation of initial codes, collation of codes under recurrent or important themes, and refinement of the themes (8). Codes and themes were reviewed independently by two members of the team for impartiality (CS and MM). Ethics approval was granted by the Clinical Research Ethics Committee of the Cork Teaching Hospitals.

RESULTS

Quantitative results

Thirty-five patients were enrolled in the study, 77% ($n = 27$) of whom were female. The mean age was 43 years (SD 13). All participants were prevalent cases of depression and all were on antidepressant medications. Two-thirds of participants ($n = 22$) scored less than 13 on the WHO5 Well-Being Index, indicating poor well-being. The median energy expenditure for the group was 594 MET minutes/week (interquartile range 198–1386). The response rate for the follow-up questionnaire was 49% ($n = 17$). Three months after the intervention, nine participants had lower well-being scores, six had higher well-being scores and two were unchanged (mean pre-intervention score 10.1, mean post-intervention score 9.76, paired t-test $P = 0.84$). There was also no significant change in self-rated exercise as measured by the IPAQ: 10 participants had higher levels and seven had lower levels (median IPAQ pre-intervention 693, median IPAQ post-intervention 330, Wilcoxon signed-rank test, $P = 0.52$).

Qualitative results

Thematic analysis was conducted on participants' responses to open-ended questions. Themes relating to the perceived benefits of exercise, barriers to exercise and ways to improve the uptake of exercise are presented.

Benefits. Almost all participants were aware of some benefits of exercise, spanning the domains of medical/physical, psychological or social benefits (Box 1). Medical benefits tended to focus on cardiovascular or mechanical issues. Exercise was identified by participants to have a protective as well as a therapeutic role in their psychological well-being. Social benefits arose from meeting others and feeling included, as well as improving

Box 1. Participants views, barriers and suggestions on physical activity.

<p>The benefits of exercise</p> <ul style="list-style-type: none"> • Medical benefits: 'benefits the heart, whole body and cardiovascular system' C12 • Psychological benefits: 'gives you better self-esteem ... the feel good factor after every work out' C29 • General/social benefits: 'helps lose weight, delays aging, makes you feel younger' C31 <p>The barriers to exercise</p> <ul style="list-style-type: none"> • Perceived medical/physical limitations: 'fear about straining muscles' C29 • Practical/logistical issues: 'any activities I am interested in are too expensive' C27 • Motivational issues: 'can't find the enthusiasm ... feel so depressed I don't care much about my health' C21 <p>Suggestions on ways to help patients become more active</p> <ul style="list-style-type: none"> • Implementation of specific programmes 'promote exercise more in the hospital like they do with art' C35 • Emphasize positive effects and need for persistence 'remind them that it gets easier after the first few weeks' C31

participants' self-image. Few participants addressed the potential of exercise to benefit more than one of these domains.

Barriers. Participants' perceived numerous barriers to exercise. First, participants had concerns about medical issues: some felt that exercise posed a risk to them, for example through injury, while others felt that their co-existing medical conditions precluded them from exercising. Second, participants reported logistical issues such as cost and lack of amenities. The most common reason for not exercising, however, was related to poor motivation. These participants were aware of the benefits of exercise but did not act on this knowledge, because of lack of interest in their own health, lack of energy and no enthusiasm (Box 1). Some participants identified the link between motivational barriers and the symptoms of depression; others did not.

Suggestions. There was diversity in participants' preferences and suggestions. Some felt that group programmes would be useful to 'promote exercise more in the hospital like they do with art' (Case 35). Others preferred an individual approach, with a programme specifically designed for them. Participants felt that persistent encouragement from health care professionals was required, particularly given that the benefits may not be immediate. Information should be framed in a positive, 'kind' way and promoted as an enjoyable activity rather than as an additional task or obligation.

DISCUSSION

The brief educational intervention used in this study did not lead to a change in physical activity levels or

well-being in the group studied. Many participants were aware of the benefits of exercise for their physical or psychological health but had difficulty converting this knowledge into action for several reasons. Some participants appeared to have misunderstandings with respect to exercise; some perceived that exercise was not appropriate for them because of risk of injury or co-existing medical conditions. Many participants faced problems related to poor motivation. Participants demonstrated a marked variety in their preferences for modes of activity, for example for sport/non-sport or group/individual activities. However, regardless of the mode of activity a patient prefers, advice should be delivered in a positive, encouraging and consistent way. This information is useful and important; by putting a greater emphasis on the patients' beliefs and expectations of exercise, future educational interventions may be more successful.

Strengths and limitations

This small study used a pragmatic initiative, with low resource implications and generated useful insights into the experiences of a complex group of patients. Results were limited by our convenience sample and non-attendance at return clinics. To address non-attendance, we mailed questionnaires and telephoned participants to encourage their completion. Completion rates remained disappointingly low but are comparable to other studies in this population (9). Reassuringly there was no apparent difference in the participants who responded and those who did not in terms of pre-intervention activity levels or well-being. Interventions such as this may be better evaluated in a general practice (GP) rather than community psychiatry setting, as loss to follow-up would not be so great. An interview format would have allowed

probing and perhaps greater depth in participants answers. We chose a questionnaire format to reduce the risk of 'social desirability' bias, where participants give answers they think the interviewer wants to hear rather than answering truthfully.

Comparison with other studies

The promotion of exercise to patients with depression is a challenging process and has not led to meaningful changes in behaviour in other centres. Why is this case? In young Australian women, lack of motivation was a significant barrier to exercise (10). In the British Trial of Exercise and Depression (TREAD), depressed patients felt that while exercise may be a useful temporary coping mechanism, concurrent use of antidepressant medication may be required to help initiate and maintain activity (11).

Implications

These findings are relevant to health care professionals in primary care, where most consultations for depression take place. Primary care practitioners have an appreciation of their patients' environmental and social realities, thus allowing them to personalize the advice they give. Through longitudinal care, GP's can offer positive and persistent encouragement to exercise, in conjunction with the other management strategies for depression that may be required.

Conclusion

Patients with depression have wide ranging beliefs and preferences on exercise, which should be explored by health care professionals prior to delivering exercise advice. Exercise should be promoted in a positive light, with persistent encouragement, to support patients to make sustained improvements in their levels of physical activity over time.

APPENDIX 1

Questions given to participants in tandem with IPAQ and WHO questionnaires, before the educational intervention:

Have you previously been given advice on exercise?
If yes, by whom?

Are you aware of any benefits of exercise? Please give details

What are the things that make it difficult for you to exercise?

How would you feel about increasing your level of exercise? Please give details

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Questions given to participants in tandem with IPAQ and WHO questionnaires, after the educational intervention:

Since receiving the advice on exercise have you changed how you exercise? How?

Has your sense of well-being changed? How?

Do you have advice for us on ways to encourage people with mental health problems to exercise more?