PRIVATE PRACTITIONERS' USE OF EXERCISE THERAPY IN LOWER BACK PAIN

ABSTRACT: Introduction: Lower back pain (LBP) is a common problem treated by physiotherapists. Recent research confirms the need for a more dynamic approach, to the management of this condition and includes progressive activity and exercise. The current use of exercise therapy for people with LBP and the implementation of evidence based practice in this field in South Africa, is unknown. As 80% of physiotherapists in South Africa offer services in private sector, the purpose of the study was to determine the

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use of this modality by physiotherapists. The specific aims were to determine how many physiotherapists utilise exercise therapy, how much therapy time is spent on it and how the modality is applied. This information can determine whether there is a need for continuing professional development in this area.

Method: A stratified random sample of 489 South African physiotherapists was selected to take part in a survey by means of a questionnaire. Data was analysed descriptively and relationships between categories were analysed using Chi-square tests (p<5).

Results: A response rate of 85% was reached. All but one physiotherapist used exercise therapy however, only 16% of the physiotherapists spent more than half of the course of treatment on exercise therapy. Most respondents (96%) specified dosages, 95% progressed exercises, but only 46% always re-assess exercises at follow-up visits. Home exercises are often prescribed, but group exercises are seldom used.

Conclusion: South African physiotherapists in private practice use exercise therapy as a treatment modality for people with LBP. Inconsistencies concerning the implementation and time spent on exercises, suggests the need for continual professional development in this area.

KEY WORDS: LOWER BACK PAIN, EXERCISE THERAPY.

INTRODUCTION

Lower back pain (LBP) is a common problem resulting in health, social and economic implications in the western world (Staal et al 2002, Schneiders et al 1998, Underwood and Morgan 1998). The ensuing differing degrees of disability can lead to physical, psychological, economic and social implications for the individual (Wheeler and Hanley 1995). Furthermore, these authors state that physical de-conditioning due to ongoing mobility limitation as a result of LBP, can lead to a reduction in muscle strength, soft tissue mobility and cardiovascular fitness. This in turn can lead to the individual becoming vulnerable to developing repeated episodes of LBP.

A wide variety of therapeutic treatment methods are available for LBP, however not enough is known about the optimal treatment strategy (Annamalai 1999, Schneiders et al 1998, Tulder et al 1997). Thus while the evidence for the effectiveness of many of these methods is limited, research suggests the need for a more dynamic approach towards progressive activity and exercises (Annamalai 1999, Frost et al 1995).

Exercise therapy is a central component of the more dynamic approach advocated for use in the management of LBP (Faas 1996). The purpose of the study was to determine the use of exercise therapy for persons with LBP by South African physiotherapists in private practice. Specific aims included to determine how many physiotherapists utilise exercise therapy, how much therapy time is dedicated to exercises and how these are taught and implemented. For the purposes of this study exercise therapy was defined as the use of exercises or movement to achieve a therapeutic result.

METHODS

A cross-sectional descriptive survey was done by means of a self-developed postal questionnaire, which included quantitative and qualitative items.

Sample

Physiotherapists registered with PhysioFocus, the private practitioners' organisation of the South African Society of Physiotherapy (SASP), formed the study population (n = 1044). A random sample of 600 physiotherapists in private practice was selected. The sample was stratified according to provinces in South Africa in order to ensure proportional representation and limit bias.

Instrumentation

A questionnaire consisting of thirteen questions with quantitative and quali-

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CORRESPONDENCE TO: Zetna Strydom P.O. Box 7625 Roggebaai 8012 54 Panorama Drive Stellenberg 7530 Tel: (021) 919 0864 (w) Email: zetna@telkomsa.net tative components, was developed. The questionnaire included Likert-type, multiple choice and qualitative questions. The first two screening questions were for the purpose of excluding physiotherapists who had not treated clients with LBP during the previous six months. The following four questions were on the education and experience of the physiotherapist and the remaining seven questions related to the use of exercise therapy and the time spent on its application.

Procedure

Ethical approval for the study was obtained from the University of Stellenbosch (No 2001/C093). Following a pilot study the final questionnaire was sent out together with an explanatory letter and a self-addressed enveloped. Non-respondents were followed-up telephonically. Data was captured onto Microsoft Excel.

Data analysis

Data were analysed using Microsoft Excel and descriptive statistics were used. The relationships between categories of responses were tested using the Chi-square test at a probability of p<0.05. The qualitative data were analysed into themes and categories.

RESULTS

Due to inaccuracies in the list of names received, 111 physiotherapists were untraceable; therefore, in effect the actual sample was 489 physiotherapists. A response rate of 85% (n = 416) was obtained. Eighty of the respondents were excluded as they did not fulfil the inclusion criteria, therefore 336 respondents were included in the study.

Twenty seven percent (n=91) physiotherapists treated an average of 6-10 clients with LBP per week, while 25% (n = 85) treated more than 20 per week.

Sixty-six percent (n=222) of the physiotherapists in this study qualified before 1990 and most commonly gained their knowledge regarding exercise therapy from courses/workshops (26%) and professional literature (21%). The internet and 'lay' literature were indicated by 2% and 5% of respondents respectively.

Figure 1: Total time spent on exercise therapy in a course of treatment.



Figure 2: Physiotherapists' perception of the effectiveness of exercise therapy as a factor in their use of it.





Figure 3: Time spent on exercise therapy during one treatment session.

Time spent on exercise therapy

One respondent did not use exercise therapy to treat persons with LBP and only fifteen percent (n=50) of the physiotherapists estimated that they spent more than half of a treatment course total therapy time - on exercise therapy (Figure 1). There was a positive relationship between the total therapy time spent on exercise therapy and the number of years that the physiotherapist was qualified (p<0.05). There was no relationship between the total therapy time spent on exercise therapy and the number of clients with LBP who were treated weekly (p>0.05). However, the perception of physiotherapists of the effectiveness of exercise therapy was given as the factor that had the most positive influence on their use of this modality (Figure 2).

A wide variety of responses were received on the frequency with which specific amounts of dedicated treatment time was spent on exercise therapy during one treatment session (Figure 3). The majority of physiotherapists (56% n=189) indicated that they 'seldom' or 'never' spent a whole treatment session on exercise therapy. Conversely, only 29% (n=98) of physiotherapists estimated that they used a whole treatment session 'always' or 'often' for exercise therapy. Exercise therapy, that occupied less that 1/4 of a treatment session 'always' or 'often', was indicated by 38% (n=128). The majority of physiotherapists 73% (n=246) indicated that they spent a 1/4of the time of a treatment session on exercise therapy 'always' or 'often'.

The application of exercise therapy

The method of presentation and the use of handouts (Figure 4) as well as the prescription of dosages (Figure 5), demonstration and progression of exercises all relate to the application of exercise therapy. The type of exercise used also contributes to the 'application'. The responses to these questions can be summarised as follows:

Method of presentation

- Home exercises were 'always' prescribed by 80% (n=269) of the physiotherapists.
- Exercises were taught individually to

Figure 4: Application of exercise therapy.



Figure 5: Nature of exercise therapy dosage.



patients 'always' or 'often' by 88% (n=297) physiotherapists.

• Exercises were 'never' given to a group of patients by 62% (n=208) of respondents, while only 18% (n=61) 'always' or 'often' did so.

Handouts were 'always' or 'often' given to their clients by 77% (259) of physiotherapists.

Demonstration of the exercises was done by the majority of the physiotherapists (85%, n=286) who indicated that they 'always' or 'often' do so. However, not as many physiotherapists (76%, n=255) 'always' or 'often' asked their clients to demonstrate their exercises to check for correct execution during the treatment, and only 46% (n=154) 'always' asked the client to demonstrate home exercises at the follow-up treatment.

Dosage and progression of exercises is 'always' or 'often' specified by 96% (n=323) of respondents.

Type of exercises prescribed - 90% (n=302) of respondents indicated that they 'always' or 'often' used all five types of exercises with re-education of stabilising muscles and stretching exercises being used the most often (Figure 6).

DISCUSSION

Most South African physiotherapists in private practice sampled in this study treated at least six patients with LBP per week, and used exercise therapy, in some form, in the management of their clients with LBP. This latter finding is similar to that of Cohen and Rainvillle (2002).



Figure 6: Types of exercises utilised during exercise therapy.

The positive correlation between the number of years since qualifying and the total therapy time spent on exercise therapy must be weighed against the fact that 66% of this sample had qualified in excess of ten years. This raises the question of whether more recent graduates might rely more on their technical skills than on the use of exercise therapy. Should this be the case, the focus and structure of the undergraduate curriculum might be a contributing factor. While all physiotherapists in the sample, apart from one, do use exercise therapy to some degree, more than a third of them regularly spent less that 25% of a treatment session on this modality. Informal discussion and observation amongst colleagues points to the increasing role assumed by biokineticists within the medical profession for the management of a wide variety of pathologies. As the major focus of their treatment is exercise it might be prudent, as a profession, to examine why this situation has developed in South Africa, and the evidence for the use of exercise therapy by physiotherapists.

Exercises taught as 'home exercises' is considered to be an effective method in the treatment for LBP (Kuukkanen and Mälkiä 2000). One advantage of home exercises, identified by Jenkins and Borenstein (1994), is the respon-

sibility that is given to the client. However, the participants of this study did not express the opinion that home exercises are effective, based on their experience or more valid evidence, but for the following reasons: '... saves time for the therapist, as well as for the client' and '... they can continue with treatment at home, while saving on treatment expenses.' For physiotherapists in private practice and their clients, time spent on treatment and remuneration might be interrelated. It appears that one of the motivating factors for the prescription of a home exercise programme, by this population, is an attempt to address the time / remuneration factor. However, physiotherapists do attempt to provide motivation and support for patients through the handouts which they provide to their patients. The effectiveness of this medium to support the demonstration of exercises by the physiotherapist and increase patient compliance, was confirmed in a randomised controlled trial by Schneiders et al (1998).

While the results of the current study showed that most physiotherapists ask their clients to demonstrate their exercises while teaching them during a treatment session, fewer physiotherapists actually asked clients to demonstrate the exercises again at follow-up visits. While this omission might well be due to time constraints or neglect, one could argue that treatment effectiveness is not only compromised, but might even be dangerous if the exercises are inappropriately practiced by the patient. This potential danger could be increased if exercises are progressed to more demanding levels without making sure at the following visit that patients have carried out the exercises effectively and safely at home.

The cost-effectiveness of home exercises as well as group exercises is confirmed in the literature (Frost et al 1995, Moffett et al 1999). It appears that while most physiotherapists in this study prescribe home exercises, few make use of group exercise classes, which could also save time for the physiotherapist (Moffett et al 1999). Two of the deterrents to conducting exercise classes were the financial disadvantages of low medical aid tariffs for group classes and '... the physical need for space' in which to provide group exercises.

The dosage of exercise therapy is an area in which a lot of uncertainty still exists (Tancred and Tancred 1996). Jenkins and Borenstein (1994) suggested that exercises be done four times per week with a duration of a minimum of 20 to 30 minutes to be maximally advantageous. If this is the case, the 'average' physiotherapists in this study that spent a quarter to half of a treatment session on exercises 'always' or 'often' must be making treatment appointments in excess of one hour on a regular basis. It is unlikely that this is a general tendency in private practice. However Tancred and Tancred (1996) also stated that it is almost impossible to use a set dosage, because of the many factors that can have an effect on decision making related to exercises. Therefore, without more evidence on the optimum dosage or proportionate amount of time that should be spent on exercises in particular pathologies at a variety of stages, it is not possible to determine the clinical significance of the finding that physiotherapists in this sample spend less than half of the total time on exercise therapy.

Different types of exercises are used by physiotherapists of this study. These

include: re-education of stabilising muscles, stretching-, mobilising-, neural mobilising- and strengthening exercises. The above mentioned exercises do not form a comprehensive list of exercises used by physiotherapists for clients with LBP and does not include co-ordination and fitness exercises or work hardening exercises. However, prescribed exercises for LBP usually include components of muscle strengthening, co-ordination, flexibility of the spine and cardiovascular fitness (Staal et al 2002; Scheer et al 1995; Wheeler and Hanley 1995).

In their systematic review of randomised controlled trials Tulder et al (1997) came to the conclusion that no evidence exists for the effectiveness of specific types of exercise programmes above other management methods of persons with LBP. This is concurrent with results of Mannion et al (1999) who found that persons with LBP showed the same improvements with different types of exercise programmes and that the improvements were still present after six months.

On the other hand, Annamalai (1999) stated that the nature of the application of exercise therapy influences the effectiveness of this modality, with the result that the therapists' judgement in the choice of exercises must be based on scientific evidence and the therapists' clinical experience (McGill 1998). Evaluation for specificity, therefore, is of prime importance, as rehabilitation of persons with chronic LBP is difficult because of the complexity of the pathogenesist (Johannsen et al 1995). It might be as a result of this complexity that there is a relative lack of evidence in this field, and that physiotherapists in private practice included in this study have been influenced over time in their perceptions of the effectiveness of exercise therapy.

CONCLUSIONS

Most physiotherapists in South Africa use exercise therapy in the management of clients with LBP however there appears to be a need to expose the profession to stronger evidence in support of this modality, at under- and postgraduate levels. The implementation of compulsory Continuous Professional Development (CPD) in South Africa, might result in the dissemination of further knowledge of exercise therapy. The current context of overlapping of services between professions, within and outside traditional health care service delivery, makes it imperative that physiotherapists re-examine their role in health care and the rehabilitation of all of their clients, whether sportspersons, manual workers, the aged or any other designation.

It is also necessary that the costeffectiveness of group exercises, as confirmed in the literature (Frost et al 1995, Moffett et al 1999), should be brought to the attention of different role players so that medical aid societies can re-imburse physiotherapists appropriately. In this way it might be possible for more physiotherapists to absorb the initial costs of setting up facilities needed for group exercises.

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