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An investigation into student physiotherapist’s understandings of exercise adherence and their use of motivational strategies to improve exercise adherence in patient groups – a focus group study

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2.3 Authors Declaration

Please include the following statement (signed) on a separate page after the title page with your manuscript

I, the undersigned declare that this project which I am submitting is all my own work and that the data presented is authentic.

_________________________ (Printed Name)

_________________________ (Signature)

Date / /
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Abstract

Title: An investigation into student physiotherapist’s understandings of exercise adherence and their use of motivational strategies to improve exercise adherence in patient groups – a focus group study

Authors: Michelle Devane, Dr. Norelee Kennedy and Maria Garrett

Background: In physiotherapy practice, poor patient adherence to treatment has been cited as a principal reason for failure to recover from injury (Bassett 2003). Lack of motivation has been suggested as a contributing factor to this (Sluijs et al. 1993). Although adherence is an important concept in physiotherapy, currently there is no research investigating student physiotherapists’ understanding of the concept or how they manage patients who are non-adherent.

Objectives: To explore student physiotherapists’ understanding of the concept of exercise adherence and their use of motivational strategies in enhancing patient adherence to exercise programmes.

Methods: A qualitative design using focus group methodology was employed. Two focus groups (six participants in each) were conducted with 4th year undergraduate physiotherapy students from the University of Limerick. Groups were audio-recorded, transcribed verbatim and subjected to thematic analysis by which prominent themes were identified.

Results: Three main themes emerged. In “Perceptions of Adherence” there was variability in the understanding of the concept but the patient-therapist relationship was considered important. Under the theme of “Use of Motivational Strategies” it emerged that students used a variety of motivational strategies on clinical placements. Patient individuality and clinical experience as both a positive and negative factor were found in “Influences on the Use of Motivational Strategies”.

Conclusions: A theory-practice gap emerged regarding the theoretical knowledge gained in university about adherence and the use of motivational strategies, and its application in clinical practice. The optimum method of delivering education to bridge this gap needs to be explored in future studies.
Keywords: Physiotherapy, Adherence, Motivation

References:
1. Introduction

Often physiotherapists encounter patients who fail to recover from their injury despite any obvious pathological reason for this poor outcome. A factor, that can often be forgotten, which could be the reasoning behind this failure to recover is poor patient adherence to treatment (Bassett 2003). Adherence has been defined as: “the extent to which a person’s behaviour corresponds with agreed recommendations from a healthcare provider’” (WHO 2003). In physiotherapy practice adherence to exercise programmes is of crucial importance as treatment effects depend primarily on it. Although it is difficult to determine exact non-adherence rates, as patients are often not willing to admit to non-adherence, some papers have suggested non-adherent rates of up to two thirds of patients (Sluijs et al. 1993a). It has been suggested that long-term adherence rates, after formal treatment has ended, can even be as low as 20% (Sluijs et al. 1993b).

Adherence or compliance (terms are used interchangeably) is a complex topic which is dependent on many variables such as pain, patient attitudes and beliefs and psychosocial issues (Middleton 2004). However, one of the most frequently cited factors that is known to have a direct impact on adherence is motivation (Biddle 2001). Lack of motivation has been alluded to being one of the main reasons for non-adherence to physiotherapy rehabilitation programmes (Sluijs et al. 1993a; Friedrich et al. 1998; Maclean 2002). In the literature the concepts of adherence and motivation have often gone hand in hand. Understanding the dynamics of treatment motivation is essential for those who seek to enhance patients’ adherence and thus enable recovery (Chan et al. 2009).

Motivation is a concept that is often difficult to define and thus difficult to understand and enhance. Some definitions have linked motivation to the theoretical concept of self-efficacy. Self-efficacy refers to: “beliefs in one's capabilities to organize and execute the course of action required to produce given attainments” (Bandura 1977). Therefore it can be hypothesized that motivation will be dependent on many different factors which will effect these beliefs. Consequently as health care professionals working to improve motivation it will be essential to incorporate the psychological aspect of the person in the rehabilitation in order to encourage a positive change in their beliefs.
It has been highlighted that physiotherapists are aware of the psychological impact an injury can have on a person. In a study by Hemmings and Povey (2002) they surveyed physiotherapists and found that over 90% of them felt that athletes were psychologically affected by injury. But what strategies can be put in place by physiotherapists to encompass the psychological as well as the physical aspect of rehabilitation and thus encourage adherence?

Physiotherapists have been reported to employ a variety of motivational tools in an effort to improve adherence such as goal-setting (Bassett and Petrie 1999), ensuring variety in the rehabilitation programme and encouraging positive self-thoughts (Hemmings and Povey 2002). However, for physiotherapy students on clinical placement, using motivational tools to improve patient adherence and considering the psychological aspect of the treatment, can often seem like foreign concepts. In a study by Arvinen-Barrow et al (2010) they interviewed seven experienced chartered physiotherapists working in the UK about their personal experience in using psychological interventions with injured athletes. The findings of this study suggested that physiotherapists recognised the importance of taking the psychological aspect of the injury into account in the rehabilitation. However, the knowledge they had on the psychology of injury was built through experiential learning rather through formal learning. Therefore for a student physiotherapist without this experiential learning, understanding the psychological aspect of an injury may be more problematic.

There are many benefits associated with improved adherence including reduced physical disability, improved long-term outcomes and reduced health care costs (Woodard and Berry 2001). Therefore, especially in regard to the long term outcome for the patient, it is essential that physiotherapists are equipped with the skills to deliver appropriate motivational strategies in order to improve adherence.
2. **Study Objectives**

- To explore student physiotherapists’ understanding of the concept of exercise adherence.
- To investigate student physiotherapists’ use of motivational strategies in enhancing patient adherence to exercise programmes.
3. Methods

3.1 Study Design

The qualitative approach of focus groups was deemed appropriate for this research question as they can provide information about a range of ideas and feelings that individuals have about certain issues, as well as highlighting the differences in opinions between groups of individuals (Rabiee 2004), thus allowing further ideas to be generated.

3.2 Ethical Approval

Ethical approval for this study was granted by the Clinical Therapies Research Ethics Committee (CTREC).

3.3 Participants

Purposive sampling of the fourth year undergraduate physiotherapy students in the University of Limerick was carried out. This sample was chosen as the students had the most clinical experience having all completed four clinical placements. Six participants were recruited for each group as recommended by Krueger (1998a) who states that this is appropriate when the goal is to gain an in-depth understanding of what participants have to say. An e-mail (Appendix 1) was sent to the sample requesting their participation in the study. The respondents were asked to state if their most recent placement was in an in-patient or an out-patient setting. Of the eighteen students that responded twelve were randomly selected via a computerized random numbers generator (www.random.org) to reduce selection bias (Huston and Hobson 2008), as the respondents were known to the moderator. They were then divided into Focus Group 1 (in-patient) and Focus Group 2 (out-patient). The participants were sent on an information leaflet (Appendix 2) regarding the nature and reason for the study.

3.4 Inclusion/Exclusion Criteria

The inclusion criteria required that participants were currently (time of study) fourth year physiotherapy students in the University of Limerick.
3.5 Materials and Procedure

The questions were developed by the researcher in conjunction with the principal investigator. The researcher assumed the role of the focus group moderator, acting only to facilitate group interaction and clarify points and if needed. An assistant moderator (a colleague of the moderator) was seated at the periphery of the group and took detailed field notes on group interaction, significant non-verbal language and key comments made.

The questioning route used in both focus groups followed the method outlined by Krueger (1998b), as outlined in Appendix 3, and these were posed in a conversational manner. Probing was used to expand on vague ideas mentioned (Krueger 1998b). As the moderator was a novice, a pilot study was undertaken with four participants randomly selected from the same population. This was done to familiarize the researcher with the role of moderator (Barbour 2005). At the end of the focus group, feedback on the questioning route and flow of the discussion was sought from the participants who affirmed the appropriateness of the questioning route.

3.6 Data Collection

The focus groups took place in a quiet room with ample space in the Health Science Building, in the University of Limerick, in December 2010. On arrival participants were requested to sign a consent form (Appendix 4). They were seated in a circle around a table with the moderator, to encourage maximum participation. A digital voice recorder was placed in the centre of the table to audio record the conversation. This was tested for sound quality prior to commencement of the sessions.

Following the focus group a debriefing session was held by the moderator and assistant moderator to discuss overall impressions, significant quotes and major ideas presented (Krueger 1997).
3.7 Data Analysis

Theoretical thematic analysis was employed to analyse the data as outlined by Braun and Clarke (2006). Audiotapes were transcribed verbatim with participants’ names coded to maintain anonymity. The researcher then read the transcript three to four times to familiarise themself with the content. Transcripts were then examined line by line and similar statements were grouped together to form concepts. For each concept the frequency (number of times said), extensiveness (number of participants that said it), intensity (strength of opinion) of comments and the specificity (opinions based on experience) of the responses were taken into account as recommended by Krueger (1997). Themes were then created by comparing and contrasting concepts identified by both groups. The assistant moderator’s notes were used alongside the transcript to aid analysis. Member checking was completed by emailing a brief, descriptive statement (Appendix 5) to all participants, summarising the key ideas and quotes from the focus groups, so as to ensure all views were represented appropriately. All participants responded in agreement. To further ensure trustworthiness in the analysis of the data an audit trail (Appendix 6) was maintained (Morse et al. 2002).
4. Results

4.1 Participant Information

The demographic characteristics of the participants in both focus groups are outlined in Table 1 and Table 2. In Focus Group 1 there was a wider variety of clinical experience than in Focus Group 2. This implied that they may have had more diverse experiences of adherence to draw on.
### Table 1. Characteristics of Focus Group 1 participants

<table>
<thead>
<tr>
<th>Participant Code</th>
<th>Age</th>
<th>Gender</th>
<th>In-patient Clinical Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA1</td>
<td>22</td>
<td>F</td>
<td>General mobility/elderly rehabilitation, respiratory</td>
</tr>
<tr>
<td>PA2</td>
<td>21</td>
<td>F</td>
<td>Neurology/elderly rehabilitation, respiratory/ICU</td>
</tr>
<tr>
<td>PA3</td>
<td>21</td>
<td>F</td>
<td>Neurology, orthopaedics, cardiology/respiratory</td>
</tr>
<tr>
<td>PA4</td>
<td>26</td>
<td>F</td>
<td>Elderly rehabilitation/orthopaedics/neurology, respiratory/ICU</td>
</tr>
<tr>
<td>PA5</td>
<td>23</td>
<td>F</td>
<td>Orthopaedics, neurology, respiratory-cystic fibrosis</td>
</tr>
<tr>
<td>PA6</td>
<td>21</td>
<td>F</td>
<td>Respiratory, elderly rehabilitation x 2</td>
</tr>
</tbody>
</table>

### Table 2. Characteristics of Focus Group 2 participants

<table>
<thead>
<tr>
<th>Participant Code</th>
<th>Age</th>
<th>Gender</th>
<th>Out-patient Clinical Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>PB1</td>
<td>30</td>
<td>F</td>
<td>General OPD, community OPD</td>
</tr>
<tr>
<td>PB2</td>
<td>21</td>
<td>M</td>
<td>General OPD x 2</td>
</tr>
<tr>
<td>PB3</td>
<td>20</td>
<td>F</td>
<td>General OPD, community OPD</td>
</tr>
<tr>
<td>PB4</td>
<td>21</td>
<td>F</td>
<td>Community OPD x 2</td>
</tr>
<tr>
<td>PB5</td>
<td>23</td>
<td>M</td>
<td>General OPD</td>
</tr>
<tr>
<td>PB6</td>
<td>20</td>
<td>F</td>
<td>General OPD x 2</td>
</tr>
</tbody>
</table>

<F= female; M = male; OPD = outpatients department>
4.2 Group Dynamics
In both groups responses were initially addressed to the moderator but as the discussions progressed, this decreased and there was more interaction observable between participants. In both groups little moderator involvement was needed once the questions were posed, apart from a little probing on some views raised in both groups. In Group 1 all participants contributed equally to the discussion. In Group 2 there was one quiet participant and one participant that tended to stray from the question being asked. In Group 1 the number of interruptions was higher meaning that participants didn’t speak for as long or give as in-depth answers as in Group 2. The majority of participants in both groups gave specific answers in relation to their clinical experience. In both groups the atmosphere was friendly and conducive to discussion.

4.3 Focus Group Findings
In both focus groups three principal themes and associated concepts emerged (Table 3). These will be presented by referring to selected quotations from the transcripts. For confidentiality purposes there will be codes following each quotation indicating the focus group session, the participant and the page number in the transcript (G1,AP4,p.11).
| Perceptions of Adherence                  | • Understanding of the Concept  
                                              | • Patient-Therapist Relationship |
|------------------------------------------|----------------------------------|
| Use of Motivational Strategies           | • Goal-Setting  
                                              | • Functional Exercise  
                                              | • Education |
| Influences on the Use of Motivational Strategies | • Clinical Experience  
                                              | • Patient Individuality |

Table 3. Summary of focus group themes and concepts
4.3.1 Perceptions of adherence

Understanding of the Concept

There was some disagreement amongst the groups as to their understanding of the concept of non-adherence. Group 1 had a strict view on adherence.

“...they would need to fully go along with what you have discussed with them”, (G1, AP3, p.5).

While Group 2 had a more mixed opinion on the concept of non-adherence.

“I suppose just not doing the full programme or just doing a few or not doing them at all”, (G2, BP1, p.6).

“...maybe not doing them properly too”, (G2, BP3, p.6).

It was mentioned extensively in Group 1 (n=3), that the patient should be actively involved in developing the exercise programme.

“Ideally it should be discussed with them that it isn’t just say here’s your exercise plan go do it”, (G1, AP1, p.5).

“Like I think it’s important that you ask the patient...what are they expecting out of physio”, (G1, AP1, p.13)

Despite the mixed opinions of the concept the significance of it and the challenges to ensure it were considered intensely, indicated by increased tone of voice.

“...talking about it makes you think how important it is to get them to adhere and how difficult it is. You just don’t think about it usually when placement is over...you should be like “God (emphasis) it was hard (emphasis) to make them exercise” and things like that. It hit home”, (G2, BP6, p.17)
Patient-Therapist Relationship

A good patient-therapist relationship was thought to have a huge influence on adherence. This concept was frequently (n=13) and extensively (n=8) mentioned throughout both focus groups.

“...I think if they feel like you’re interested in them and that they’re progressing well then I think they would be a bit more obliging towards you as well”, (G1,AP6,p.5).

“...you’re going to do something for someone you like way more likely than for someone you don’t like so it’s really important”, (G2,BP3,p.11).

This concept was thought to particularly apply to physiotherapy as opposed to other health care professions, which was mentioned frequently (n=5).

“Yeah I think that’s what they [the patients] like about physios as well is that we take a bit of time to get to know what they’re like...I think that’s why hopefully then they are a little bit more compliant towards us”, (G1,AP6,p.8).

4.3.2 Use of Motivational Strategies

All of the participants acknowledged that they had used different motivational strategies in the past including compromise, cognitive behavioural therapy, offering rewards, activity diaries, varying the programme, writing out the programme and reiterating the importance of the exercise. The three most frequently and extensively mentioned strategies used are outlined.

Goal- Setting

The use of goal-setting as a motivational tool occurred frequently (n=15) and extensively (n=7) throughout both focus groups. One participant mentioned a specific example of setting a goal for a patient of returning to their baseline.

“...I had a patient that used to walk to the post office in 5 or 10 minutes but she was saying “oh I’m so breathless” and then when we were doing our mobility I
was like well you used to always walk to the post office so there’s no reason now why when you go back that you can’t go again like making it a patient centred goal approach...”, (G1,AP1,p.6).

There was some disagreement in group 1 with regard the use of patient-specified goals or physiotherapy related goals.

“I think if you’re using for us our kind of physio related goals like strength and all that that’s going to mean nothing to them what they want is function...if its someone younger getting back playing sports or if its someone older just that they can walk to the shop. They need something that you can put back into the reality of their life when they go home...”, (G1,AP6,p.11).

However another participant felt the opposite was also true.

“Some people love being told numbers...I was able to bring my leg up by ten or whatever”, (G1,AP1,p.11).

The concept of goal-setting being a collaborative, equal process between therapist and patient was agreed upon by many of the participants in both groups (n=5).

“It [the goal-setting process] should be equal”, (G1,AP5,p.14)

“Yeah I think as well it’s very important to ask them their goals because....as students we’re trying to get through the whole thing that we don’t take time to consider what they want to achieve”, (G2,BP4,p.7).

Functional Exercises

It was acknowledged frequently (n= 11) and extensively (n=7) throughout both groups that ensuring the exercise is functional and patient-specific would improve adherence.

“...they do it functionally like when they’re brushing their teeth, standing on one foot”, (G2,BP1,p.6).

“...just making it functional and kind of sports specific if that’s what they're into or if they have any other activities that they enjoy doing at home. Try and like
rearrange the treatment sessions so it’s replicating those activities that they enjoy doing at home”, (G2,BP5,p.8).

One participant gave a specific example of an experience they had which worked to improve adherence, in which the exercise was made functional and thus fun and interesting for the patient.

“...I had a patient...he was an ankle patient and he wanted to get back to soccer...you had him standing on one foot and at the same time you had him throwing the ball against the wall...we were bringing the ball back into it rather than just doing stuff with the ankle in isolation so it was a bit more fun an enjoyable”, (G2, BP4,p.8).

Education

The necessity of adequate patient education on the reasons for and the benefits of exercise, in order to ensure adherence was a concept raised frequently (n=7) and by the majority of participants (n=5) in Group 1.

“You have to explain why they have to do the exercises and what benefit is this to me...if you just give someone a strengthening programme...if there are no benefits observable to them they won’t see the point in continuing it”, (G1,AP6,p.3).

“..., if they don’t fully understand why they’re sick...explain more to them or educate them more on it, then they have more trust in you as a practitioner and they seem to adhere better”, (G1,AP3,p.7).

This concept was similarly discussed extensively (n=6) and frequently (n=10) in Group 2, but this time there was more of an emphasis on the patient’s understanding of the education.

“That they actually understand it not that you just told them what it is because half the time you tell the patient and they don’t know what you’re after telling
them. It’s like really trying to break it down to their level and when you understand your pain you’re more likely to try to fix it”, (G2,BP2,p.11).

One patient gave a specific example from clinical experience of how education had worked in regards to a whiplash patient who continuously wore a neck brace.

“I educated her on that while she was wearing this neck brace she was you know decreasing the strength of her muscles...maybe it was a four week period that she had completely turned around and she wasn’t using the neck brace and her pain was decreased purely by strengthening up the muscles in her neck. So the education component really worked well there”, (G2,BP4,p.5)

4.3.3 Influences on the Use of Motivational Strategies

Patient Individuality

It was frequently (n=15) and extensively (n=6) remarked upon in both groups that the patient’s personality is going to have a vast impact on their motivation and adherence, and accordingly guides the use of different motivational strategies.

“It’s the personality types and you need to be clued in to how to deal with certain personalities...” (G2,BP1.p.15).

“Like a patient centred goal approach is the ideal for motivation but...what we want is the best outcome health-wise for the patient and sometimes that theory or that framework is not appropriate in certain patients and personalities”, (G1,AP1,p.15).

The concept that there is no prescription that is going to work for everyone and that everyone should be treated on an individual basis was mentioned frequently (n=10) and agreed upon passionately in both groups.

“...what we were saying all along about the whole thing that’s its individual (emphasis) to each patient, that’s there’s no recipe out there that’s going to work with everyone”, (G1,AP5,p.17).
“...it's also an awareness that the one technique is not going to work for everyone so that's when you really have to adjust it slightly for different people”, (G2,BP4,p.13).

Clinical experience

Clinical experience was cited as both an advantage and a disadvantage in attempting to improve adherence. The lack of clinical experience as a limiting factor was specifically discussed in regard to the goal setting process.

“I couldn’t actually sit down with a patient and set those goals because I don’t have the clinical experience to know what’s realistic and what’s not”, (G1,AP1,p.12).

However, the clinical experience they had already acquired was observed extensively (n=5) as an enhancing factor to improving adherence in Group 2. One participant gave a specific example of this in relation to education.

“...the education is definitely easier now than it was initially. Because you have a better understanding of how the patient is going to be affected I think”, (G2,BP5,p.13).

The majority (n=9) of participants in both groups agreed that clinical experience was the main area where they learned about adherence.

“I think by actually trying something and seeing how it goes right and how it goes wrong that’s the best way you can learn”, (G2,BP4,p.17)

“...you can read it in the books all day long but at the end of the day you have to be out there dealing with people in reality to actually see how it works. So definitely experience is the key”, (G2,BP1,p.17).

While participants were quite cynical about the value of the knowledge gained through formal learning in university.
“...they [university] could give you a situation like...how would you motivate this patient but it all depends on the patient...you don’t know until you meet that patient”, (G1,AP5,p.16).

Participants in both groups (n=5) expressed high expectations that with further clinical experience getting patients to adhere would become easier.

“It’s kind of trial and error like you don’t know what’s going to work for some people...just trying different things to get them to adhere”, (G2,BP6,p.13).

“...it will come with experience as well. We will be able to read patients more”. (G1,AP5,p.9).
5. Discussion

5.1 Main Body

There is a significant amount of literature regarding the concept of adherence to physiotherapy rehabilitation and the use of some motivational strategies to improve adherence. However, to the author’s knowledge this is the first study exploring the views of physiotherapy students on the concept of adherence and the factors influencing their management of patients who aren’t adhering to their exercise programme.

5.1.1 Students’ perceptions of the concept of adherence

Within a physiotherapy rehabilitation setting there are a variety of patient behaviours that may indicate adherence, depending on the type of injury or condition that the patient presents with. These include attending appointments, carrying out home exercise programmes and taking an active role in their rehabilitation (Kolt et al. 2007). The groups in this study differed in their opinions of the concept of adherence with Group 1 favouring a more stringent view, while Group 2 had a more multifaceted perception. This more complex view of adherence, encompassing many variations, rather than an “all or nothing” approach is reiterated in the literature (Perkins and Epstein 1988; Agras 1989).

There is a substantial amount of evidence in the literature indicating that better adherence is related to better outcomes for a variety of musculoskeletal conditions (Brewer et al. 2000; Kolt and McEvoy 2003; Pizzari et al. 2005). The students in this present study reported to have an appreciation for the importance of ensuring patients adhere to their exercise programme and they all recognised that the use of motivational strategies was a key to this. The strong link between adherence and motivation is highlighted in a study by Maclean et al (2002). Motivation of patients has been defined as “the most important, yet the most difficult part of the work of the therapeutic professions…” (O'Gorman 1975), which was a concept that was reiterated in this study.
5.1.2 Use of different motivational strategies

Self-determination theory (SDT) (Appendix 7) is an approach to human motivation and personality which suggests that one’s behaviour can be influenced by internal and external factors (Chan et al. 2009; Deci and Ryan 2000). These factors differ in regards to the level of autonomy or level of self-determination experienced by each person. Internal factors or intrinsic motivation, which has the highest level of autonomy, occur when actions are performed because of an interest or enjoyment, regardless of the perceived value of the behaviour. Participants in this study cited the incorporation of functional and interesting exercises into the rehabilitation programme, as being one of the most beneficial motivational strategies they utilized. This strategy of encompassing some kind of “fun” activity into the regular exercise programme has been explored in the literature (Lange et al. 2011; Williams et al. 2007) particularly with regards to the paediatric setting.

External factors or extrinsic motivation is far more complex, depending on a greater number of variables. These can be divided into four separate categories, two of which are dependent on controlled motivation (external and introjected regulation) and two of which are dependent on autonomous motivation (identified and integrated regulation). External regulation, which is the most controlled form of extrinsic motivation, occurs when the behavioural goals are to satisfy an external contingency, such as to receive rewards. This was mentioned as a strategy used in Focus Group 1, but it did not reach saturation level. However, a concept that did reach saturation level in both groups was that of the beneficial effects of maintaining a good patient-therapist relationship. In this case the satisfying of the external congruency would be to please, or rather not to disappoint the physiotherapist who prescribed the exercises. This concept was indicated in a study by Campbell et al (2001) in which participants acknowledged loyalty to the therapist as a reason for compliance, particularly in the short-term. In another study by Maclean (2002) health-care professionals cited building a rapport with a patient as the most common technique they employed in order increase motivation.

Introjected regulation is more autonomous, being brought upon by pressures within the individual themselves, for example, displaying certain behaviours such as doing the exercise in order to improve feelings of self-esteem. Interestingly this concept was not
raised by any participant in either of the groups. This may be because they felt that this was not an area where they would have any control or input in. This is similar to the theory of self-efficacy which was already discussed. It has been hypothesized that self-efficacy will have a huge role to play in predicting behaviour, as those with lower self-efficacy are less likely to believe in their own coping responses and thus, resist a change in behaviour, even if they perceive a benefit with this change (Prochaska and Velicer 1997).

Identified regulation is observed when a person displays specific behaviours because they perceive that benefits will occur. This concept was spoken about in depth in both focus groups, with the majority of the participants agreeing that adequate education on the likely benefits of the exercise is of critical importance in ensuring adherence. Patient education has been shown to be beneficial in a variety of different physiotherapeutic conditions such as low back pain (Mosely 2002) and urinary incontinence (Alewijnse et al. 2003).

Finally, integrated regulation is the most autonomous form and comes about when the person’s goals are corresponding with their values and so is concerned with their own personal needs. This concept, again, was spoken about at length in both groups with regards the use of goal-setting as a motivational strategy. It was agreed upon by the majority of participants that it is essential that the patient has some input in the goal-setting process to ensure that the goals that are developed, are specific to them and what they want to achieve. There is a considerable amount of evidence in the literature regarding the use of goal-setting in physiotherapy rehabilitation, but most of the research favours the opinions of the participants in this study in that, collaboratively set goals will be most successful (Bassett and Petrie 1999; Playford et al. 2000; Baker et al. 2001).

5.1.3 Factors influencing students’ management of non-adherent patients

As already outlined adherence is a multifaceted, complex topic which is dependent on many variables, which are specific for each patient. A concept that arouse persistently in both groups was the notion of a “patient-centred approach” being of optimum benefit.
This approach, instead of questioning why patients aren’t adhering, asks what can be done to improve adherence (Drotar 2009). The perception that each patient should be thought of as an individual and thus a prescriptive method for ensuring adherence would be impossible to achieve was agreed upon by the majority of participants. This in turn, affected their use of motivational strategies. Although there is little evidence to support this “patient-specific” approach, research is currently on-going to determine the advantages of an individualized rehabilitation versus a standard exercise protocol (Kromer et al. 2010).

Clinical experience was also identified as being one of the main factors influencing the use of motivational strategies. It was an extensively held belief in both groups that clinical practice had formed the foundation of their knowledge on adherence and their use of motivational strategies. This is in concordance with Strohschein et al (2002) who identified clinical practice as being the best area where such skills and attitudes can be taught and cultivated. However, the majority of participants were sceptical about the relevance of the knowledge that they had gained in university which may be indicative of a theory-practice gap. This incidence transpires when practitioners have difficulty in recognising the relevance of learned theories to professional practice, as outlined by Roskell (1998). The difficulty in creating real-life problems in a class-based environment was a concept raised by Richardson (1992) which may possibly contribute to this gap, a point that was also recognised by the participants in this study. However, very positively, participants were optimistic that with further experience, ensuring patients adhere to their exercise programme would become more manageable, which is in line with previous research (Arvinen-Barrow et al. 2010; Jevon and Johnston 2003).

### 5.2 Methodological Considerations

One of the principal limitations of this study was the fact that the moderator was a novice and therefore, may have lacked the expertise required to correctly handle group dynamics, draw out respondents with opposite views (Scott 1987) and ensure an appropriate questioning route. An attempt was made to address this by conducting a pilot focus group to familiarize the researcher with the role of moderator and receive feedback on the suitability of the questioning route. Another consideration to be
acknowledged is that the moderator was known very well to the participants and also, the participants were known very well to each other, which may have had an influence on results. Due to the very nature of focus groups respondents accounts are influenced by the situation in which they are produced and thus, are susceptible to a degree of social acceptability bias (Sim and Snell 1996). This may have had an influence on the opinions raised and the probability of differences in opinion being suggested.

Also, with regards to focus group research, an inherent limitation is the low generalizability of the findings. This must particularly be considered with the present study as, due to time constraints, the recommended 4-6 groups were not completed (Morgan 1996). As a result data saturation may not have been reached on some concepts, thus limiting the results.
6. **Conclusion**

The main findings of this study revealed that:

- Physiotherapy students, while appreciating the importance of the concept of adherence, they may underestimate the complexity of it.
- Students acknowledged using many different motivational strategies, which were supported by an evidence base.
- Clinical experience was found to have been one of the main influences on the understanding of the concept of adherence and the use of motivational strategies. Although it was acknowledged that it had been covered somewhat in university, participants found it difficult to relay what they had learned in university to the real-life clinical setting, thus implying a theory-practice gap.

As many motivational strategies that were mentioned did not reach saturation point further studies would be useful to investigate the significance of these. The clinical implications of these findings suggest that student physiotherapists may benefit from exposure to more real-life clinical scenarios dealing with adherence before they begin clinical placement and thus, bridge this theory-practice gap. Further studies are needed to examine the optimum method of delivering this education.
7. References

rehabilitation adherence, and rehabilitation outcome after anterior cruciate ligament reconstruction', *Rehabilitation Psychology*, 45(1), 20-37.


• Scott, D.N. (1987) Good focus group session needs the touch of an artist, *Marketing News*, pg. 35.


• Sluijs, E.M., van, d.Z. and Kok, G.J. (1993b) 'Differences between physical therapists in attention paid to patient education', *Physiother Theory Pract*, 9(2), 103-118.


• World Health Organization (2003) 'Adherence to Long Term Therapies, Evidence for action', available:  
  [accessed 21/05/10]
8. Appendices

8.1 Recruitment e-mail

Hi everyone,

For my FYP I will be conducting two focus groups consisting of fourth year physiotherapy students. The title of my project is “An investigation into student physiotherapists’ understandings of exercise adherence and their use of motivational strategies to improve exercise adherence in patient groups - a focus group study”, CTREC approval number 10 – 36. I am hoping to divide the focus groups based on whether your most recent placement was in an in-patient or an out-patient setting.

If you would like to participate would you please reply to this e-mail confirming whether you were in an in-patient or an out-patient placement setting. Respondents will then be randomly chosen to participate in the study and further information will be provided. Your participation would be greatly appreciated.

Thanks,

Michelle.
8.2 Information leaflet

UNIVERSITY of LIMERICK

OLLSCOIL LUIMNIGH

Information Leaflet

Title of the Study

An investigation into student physiotherapists’ understandings of exercise adherence and their use of motivational strategies to improve exercise adherence in patient groups - a focus group study.

Introduction

In this study we are aiming to investigate the views of 4th year physiotherapy students on the concept of patient adherence to physiotherapy treatments. We are also going to look at what techniques physiotherapy students have used in the past to motivate patients to adhere to their treatments. Finally we are going to investigate how useful physiotherapy students believe motivational tools to be in encouraging patient adherence to treatments.
Procedure

This study will be conducted through two focus groups, where pre-written questions will be posed to the group. The study will take place in the Health Science Building in the University of Limerick. It will last approximately one hour. There will be a tape recorder in the room so that the researcher can listen to the conversation and not have to write everything down.

Anonymity will be ensured to all participants and all recordings will be held in a secure location for the duration of the study. The participants will be later shown a transcript identifying key quotes and ideas raised by the group to confirm that it sufficiently represents their views.

Your participation is entirely voluntary and you may withdraw from the study at any time.

If you have any queries please do not hesitate to contact any of the research team:

- Michelle Devane, e-mail: 0766844@studentmail.ul.ie
- Dr. Norelee Kennedy, e-mail: norelee.kennedy@staffmail.ul.ie, Tel: 061 213371

If you have any concerns about this study and wish to contact someone independent, you may contact The Chairman of the University of Limerick Research Ethics Committee,

Prof Alan Donnelly,
PESS Department,
University of Limerick,
Limerick.
Tel: (061) 20202
## 8.3 Questioning Route

<table>
<thead>
<tr>
<th>Question Type</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Opening Question</strong></td>
<td>Give a description of the areas you worked in on your previous clinical placements.</td>
</tr>
<tr>
<td><strong>Introductory Question</strong></td>
<td>Have you prescribed exercise programmes to patients during previous clinical placements? Did the patients complete the exercise programme as prescribed? How did you know this?</td>
</tr>
<tr>
<td><strong>Transitory Question</strong></td>
<td>Why do you think people do or don’t adhere to their exercise programmes?</td>
</tr>
<tr>
<td><strong>Key Questions</strong></td>
<td>What is your understanding of the concept of “adherence to exercise”? What kind of techniques have you used in the past to motivate patients to adhere to their exercise programme? Did these techniques work? Why did they work? How useful do you believe techniques such as goal-setting are in motivating patients to adhere to their exercise programmes?</td>
</tr>
<tr>
<td><strong>Summary</strong></td>
<td>Are there any final comments that anyone would like to make?</td>
</tr>
</tbody>
</table>
8.4 Consent form

UNIVERSITY of LIMERICK

OLLSCOIL LUIMNIGH

Consent Form

Title of Study:
An investigation into student physiotherapists’ understandings of exercise adherence and their use of motivational strategies to improve exercise adherence in patient groups - a focus group study.

I __________________________ have agreed to participate in this focus group research.

I have read and understood the information leaflet provided. The procedure involved in the study has been fully explained by the undersigned investigator.

I understand that I have volunteered to participate in this study and that I can withdraw my participation at anytime.

I understand that personal information and results are strictly anonymous and will be used for analytical purposes only.
Signature:______________________________  Date:_________________
(Subject)

Signature:______________________________  Date:_________________
(Investigator)

Signature:______________________________  Date:_________________
(Witness)
8.5 Member checking e-mail

Hi everyone,

I would greatly appreciate it if you could read the following summary of the focus groups that were held in December 2010 and confirm that what I have written is a true interpretation of your opinions. Below are the main themes that emerged during the course of the discussions. Quotes are included to highlight the meaning of the theme.

If you disagree with any of the themes highlighted or think I have neglected to mention any aspects you feel were important I would greatly appreciate it if you would contact me at your earliest convenience. The purpose of this is to improve the validity of the results.

1. **Perceptions of adherence**

   i. **Understanding of the concept**
      
      - Mixed views on the concept but the significance was recognized

      “...talking about it makes you think how important it is to get them to adhere and how difficult it is. You just don’t think about it usually when placement is over...you should be like “God it was hard to make them exercise” and things like that. It hit home”

   ii. **Patient-therapist relationship**
      
      - Therapist and patient both have a role to play

      “Ideally it should be discussed with them that it isn’t just say here’s your exercise plan go do it”

2. **Use of motivational strategies**

The following strategies were identified most frequently as being employed to improve adherence:
i. **Goal-setting- especially if the patient is actively involved**

“Yeah I think as well it’s very important to ask them their goals because…as students we’re trying to get through the whole thing that we don’t take time to consider what they want to achieve”

ii. **Functional exercise**

“…just making it functional and kind of sports specific if that’s what they're into or if they have any other activities that they enjoy doing at home. Try and like rearrange the treatment sessions so it’s replicating those activities that they enjoy doing at home”

iii. **Education – emphasis on understanding**

“That they actually understand it not that you just told them what it is because half the time you tell the patient and they don’t know what you’re after telling them. It’s like really trying to break it down to their level and when you understand your pain you’re more likely to try to fix it”

### 3. Influences on the Use of Motivational Strategies

i. **Patient Individuality**

- Each patient is individual and thus must be treated as so.

“…it’s also an awareness that one technique isn’t going to work for everyone so that’s when you really have to adjust it slightly for different people”

ii. **Clinical Experience**

- The majority of knowledge gained with regards to adherence and use of motivational strategies has come from clinical experience.

“…you can read it in the books all day long but at the end of the day you have to be out there dealing with people in reality to actually see how it works. So definitely experience is the key”
• It is difficult to apply knowledge gained in university to a clinical setting.

“...they [university] could give you a situation like...how would you motivate this patient but it all depends on the patient...you don’t know until you meet that patient”

Thank you again for your participation.

Kind regards,

Michelle.
8.6 Audit trail

- During the transcription notes were made on changes in tone of voice, intensity with which comments were made, pauses or hesitations before comments and increases or decreases in speed of talking.
- The transcripts were read through while listening to the audio-tapes to ensure there were no inconsistencies and also, to interpret the group dynamics. Notes were jotted down outlining general themes that appeared.
- The researcher re-read the transcripts four to five times to immerse themselves in the content. Words or phrase were then written in the margins of the transcripts which summarized what was said. This process is known as “open coding”.
- Codes were copied and pasted onto a separate word document. Similar codes were colour-coded and grouped together, thus reducing the data. These groups of codes were then copied and pasted onto separate word documents and further reduced to form the final category codes or concepts.
- From the transcripts the quotes which highlighted these final concepts were copied and pasted onto the separate word documents for each code.
- Member checking was completed by emailing a brief, descriptive statement to all participants summarising the key ideas and quotes from the focus groups so as to ensure all views were represented appropriately.

*All raw data including original transcripts, coded transcripts with notations and final concepts are available in the raw data folder.
8.7 Self-determination theory

<table>
<thead>
<tr>
<th>Controlled Behavioral Regulation</th>
<th>Autonomous Behavioral Regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>External Regulation</strong></td>
<td><strong>Autonomous Motivation</strong></td>
</tr>
<tr>
<td>“I’ll get into trouble if I don’t”</td>
<td>“The treatment is important to me”</td>
</tr>
<tr>
<td>“I’ll feel bad about myself if I don’t”</td>
<td>“The treatment is meaningful to me”</td>
</tr>
<tr>
<td><strong>Introjection</strong></td>
<td><strong>Identification</strong></td>
</tr>
<tr>
<td>“I don’t”</td>
<td>“I don’t”</td>
</tr>
</tbody>
</table>

Extrinsic Motivation

<table>
<thead>
<tr>
<th>Low self-determination</th>
<th>High self-determination</th>
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</thead>
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(Deci and Ryan 2000 as adapted by Chan et al. 2009)