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Motivational Climate in Physiotherapy: a Self-Determination Theory Approach to Enhance Patients' Motivation

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Table

1. Introduction

"Physiotherapy" is a concept that was first used in 1851 by Dr Lorenz Gleich, a military physician to refer to "natural remedies" (Sharma, 2012). It derives from the Greek "phusis" meaning "nature", and "therapeia" meaning treatment. The word was officially acknowledged 43 years later by Sweden's National Board of Health and Welfare. In France, the practice became official in 1946, under the name of "kinésithérapie". This name underlines the French perception of this practise as movement-based, physical and biomechanical to chemical treatment. Even though the name "kinésithérapie" is still used in France, it is slowly replaced by its English synonym, as the different national practises are trying to gain an international unity under this name. For this reason, the word "physiotherapy" is mainly employed in this work.

Despite being a fairly new science, physiotherapy is gaining more and more weight in the array of health professionals. It is slowly widening its range of action with an unprecedented decision taken by the French Health Minister, A. Buzyn, who announced on the 9th September 2019 that physiotherapists should soon been given direct access for certain types of injury. Hence, physiotherapists are increasingly becoming part of the Public Health system. However, their practise strongly differs from other medical professionals through their type of care. Each session has to last at least 30min per patients, creating a double link between the caregiver and the care-receiver. The first type of link between is physical, as the diagnosis and part of the treatment come from the latter's hands. The second one is psychological and relational, derived from the length of time spent with the patients which is often favourable to discussion and makes physiotherapists privileged interlocutors. Throughout time, it is not rare that patients confide their fears and hopes to their rehabilitator. Therefore, psychological aspects are a wide part of nowadays practise in physiotherapy. However, "physical therapists" are not always at ease with psychological notions. In France, they are often considered – even among themselves – as "manual", biomechanical specialists rather than holistic practitioners. But by doing so, some physiotherapists might be missing an important opportunity to gain patients' trust and motivation to trigger a change in the latters' health behaviour. This supposition is supported by scientific literature, which shows that despite patients often being satisfied by the time spent in rehabilitation (Casserley-Feeney & al., 2008; Olatunji & al., 2008), 80% of patients' participation in exercises have been observed to decline over time (Russell & Bray, 2010), and 65% are partially or completely non-adherent to their home rehabilitation (Bassett, 2003). This implies that once out of sessions, patients tend to stop or diminish their program.

Among the different studies which investigate the causes of this disengagement, works such as Chan & al.'s (2009) have identified patients' compliance and motivation to the treatment protocol as key elements. More specifically, motivation is often cited as one of the most critical factors. Maclean & Pound (2000) explain it as impacting people's adherence to the therapy, and therefore, its outcomes. They state that "motivated" patients are expected to perform better in the activities organized by physiotherapists, and hence, to make higher progress than those considered as less committed to the treatment. But what exactly is motivation? And how can physiotherapists help it to blossom within patients?

In their critical review, Maclean & Pound (2000) explore the concept of patient's motivation in a context of rehabilitation. Articles are clustered into three groups. The first one, mainly composed of "clinical articles", perceives motivation as an internal "personality trait", entirely depending on patients' temper. The second one depicts it as a disposition affected by social factors, which have high importance in triggering and maintaining motivation. Finally, a third approach considers a combination of the two previous ones. To foster motivation towards treatment, those who see it is as an internal personality trait focus on patients' psychological aspects. On the other hand, those who regard motivation as mainly resulting from the social context believe that if patients internalise their rehabilitation as an important norm, it will trigger higher implication toward their therapy. The association of those two previous approaches were not discussed in Maclean & Pound 's review. However, other researches have investigated the different factors that could influence motivation. As a result, both categories contain factors, which can be classified into "personal" or "environmental" ones. For example, it is the case in Lequerica & Kortte's study (2010), where self-efficacy and confidence are underlined as important feelings to trigger and maintain motivation, as much as perceiving support from the medical team. Hence, it appears that social environment influences personal traits towards motivation, as much as personal traits have to be taken into account to adjust the way the care is delivered. This reciprocal action to enhance motivation is at the heart of the Self-Determination Theory (SDT). Therefore, a presentation of the conceptual framework will be done through the exploration of SDT, the notion of "motivational climate" and their benefits/limits for a physiotherapy application. Then, the current study will be detailed. Finally, the results will be discussed.

2. Literature review

2.1. Motivational continuum in Self-Determination Theory

Self-Determination Theory (SDT) is a model first conceptualized by Ryan and Deci in 1985. It focuses on human motivation and well-being, with a desire to explain the contrasts between individuals regarding those subjects. Sarrazin & al. (2011) underline that this theory differs from others through its qualitative approach and its recognition of different types of motivation. A first dualistic classification emerged between Intrinsic and Extrinsic motivation, known as the Cognitive Evaluation Theory. Then, a second duo was conceptualised in the Organismic Integration Theory.

2.1.1. Cognitive Evaluation Theory

Cognitive Evaluation Theory considers a dualistic classification of motivation. It opposes "intrinsic motivation" to "extrinsic motivation" (Sarrazin & al., 2011). This distribution is based on the locus from where motivation originates. Intrinsic motivation is perceived by the individuals as coming from themselves. It is a term used when the person freely realises an activity for the satisfaction it triggers, out of curiosity, interest, challenge… with no other interest or coercion. On the other hand, extrinsic motivation originates from outside the individuals, with a perception of external regulation. Here, the engagement is not generated by the desire to obtain a gratification coming directly from the activity, but by the consequences of its result(s). However in daily life, one's actions are not always intrinsically satisfying, without being coercive. Therefore, a new division emerged.

2.1.2. Organismic Integration Theory

Rather than extrinsic vs intrinsic motivation, Organismic Integration Theory considers controlled and autonomous motivation. However, as represented by Sanli & al. (2013) in Figure1, this model is not seen as an opposition but rather as a continuum.

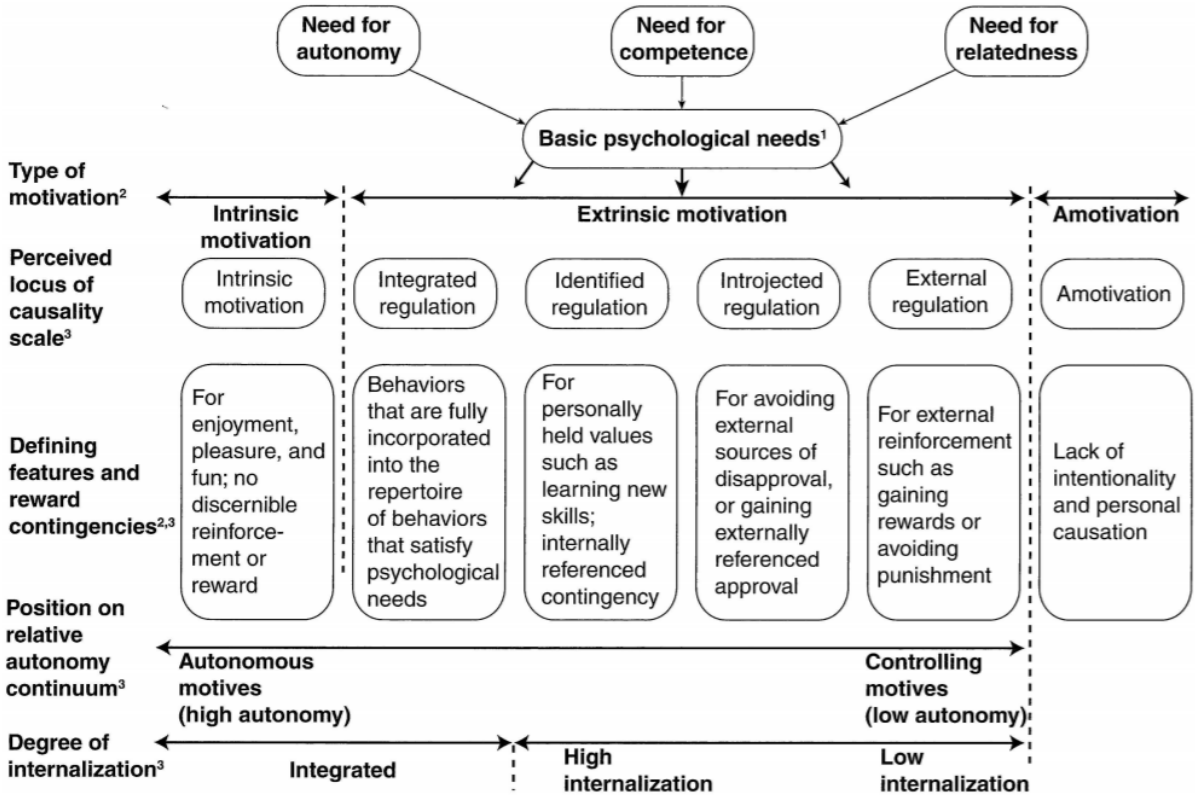


FIGURE 1 | Schematic representation of self-determination theory illustrating the features of three of the component subtheories: basic psychological needs theory, cognitive evaluation theory, and organismic integration theory. ©Martin S. Hagger. Reprinted, with permission, from R.M. Ryan and E.L. Deci, 2007, Active human nature: Self-determination theory and the promotion and maintenance of sport, exercise, and health. In Intrinsic motivation and self-determination in exercise and sport, edited by M.S. Hagger and N.L.D. Chatzisarantis (Champaign, IL: Human Kinetics), 8.

Figure 1: Sanli & al. (2013)

Controlled motivation implies a behaviour which finds its source in coercion, be it internal or external (Chan & al., 2009; Russell & Bray 2010). As represented on Figure 1, it is linked with *external regulation* and *introjected regulation* (Moustaka & al., 2012; Sarrazin & al. 2011). *External regulation* is the less self-determined type of extrinsic motivation. It is present when the person acts to avoid punishment, or in hope of a reward. It is a non-lasting type of incentive, disappearing as soon as the pressures/profits fade away (Sarrazin & al., 2011). *Introjected regulation* is the first level of assimilating an extrinsic motivation. It drains its energy from factors such as avoiding remorse, guilt or humiliation, or to comfort one's self-esteem (Moustaka & al., 2012). However, this process is not efficient as the individual still perceives it as a strain. Frequently, the person does not fully accept what is asked of him/her. This results in an internal conflict between the request and the lack of desire to fulfil it, preventing the assimilation to pass the test of time (Sarrazin & al., 2011).

On the other hand, autonomous motivation identifies as an action undertaken "with a full sense of volition, choice, and self-endorsement" (Moustaka & al., 2012). It is linked with *identified regulation* and *integrated regulation*. *Identified regulation* happens when a person's actions are regulated by external factors but he/she feels in phase with its values. Hence, the system it carries appears more acceptable to the individual and the engagement emerges from himself/herself (Sarrazin & al., 2011). Finally, *integrated regulation* is the most complete form of internalisation. It includes realising the importance of one's engagement thanks to external factors, but combined with an appropriation of its values into the person's identity. It is considered as the highest form of self-determined extrinsic motivation, as it shares many traits with intrinsic motivation. The difference lies in the action still being initiated to obtain outcomes which differ from purely enjoying the activity (Ryan & Deci, 2000).

There is one last state in the SDT as described by Ryan & Deci (2000): it is amotivation. It refers to a condition where the individual has absolutely no will to act. It happens when the person grants no value to the outcomes or does not believe that a specific behaviour could lead him/her to the desired results. It can also be caused by the lack of confidence in one's competence to achieve the goal. This condition expresses a complete lack of self-determination regarding the targeted behaviour (Sarrazin & al., 2011).

2.1.3. Motivation in Physiotherapy

As shown previously, motivation is a term holding different levels, which can be found in the rehabilitation area. Through their literature review, Maclean & Pound (2000) divides the articles thanks to a distinction between motivation being perceive as an "internal trait" versus motivation being triggered by "social environment". This classification echoes the Cognitive Evaluation Theory, which sets an opposition between intrinsic and extrinsic motivation.

Closer to the Organismic integration Theory, Lenze & al. (2004) evokes "unmotivated patients", which can be linked with the concept of "amotivation". The authors report that these patients display a slower progression and are likely to develop "depression, apathy, cognitive impairment, low self-efficacy, fatigue and personality factors". This underlines once again the importance for physiotherapists to focus on motivation to avoid such results.

Not as affecting as amotivation – but still having some negative consequences – is controlled motivation. As shown by Chan & al.'s work(2009), patients experiencing it are described to comply to the treatment because they fear to get "in trouble" if they don't do as expected. In this case, patients are under external regulation or introjected regulation.

On the other hand, Chan & al. (2009) also depict patients who display autonomous motivation. In those cases, they have identified and integrated the benefits of reaching the rehabilitation treatment's goal, and are feeling competent enough to follow the process. It translates into a higher adherence to the therapy, a greater involvement and a long-term gain. These are examples of identified and integrated regulation.

Hence, motivation toward rehabilitation ought to be a priority for physiotherapists, to avoid healthcare termination and to obtain long-term engagement in the therapy. Therefore, physiotherapists need to know how to trigger, support and feed patients' motivation. Once again, SDT brings an interesting insight to this. It underlines the fact that at the root of human motivation are the Basic Psychological Needs.

2.2. Motivational Enhancement

2.2.1. Basic Psychological Needs Theory

The Basic Psychological Needs Theory is a sub-theory of SDT like the Cognitive Evaluation Theory and the Organismic Integration Theory. It records a short list of three essential needs: the need for competence, the need for autonomy and the need for relatedness. Their satisfaction is considered essential to psychological growth as much as to human integrity and well-being (Sarrazin & al., 2011).

The need for competence reflects the extent to which individuals feel efficient in their interactions with the environment, and perceive that they have the opportunities to act and express themselves to their full capacities (Bartholomew & al., 2011; Ryan & Deci, 2000; Sarrazin & al., 2011).

The need for autonomy refers to the urge to feel responsible for one's own actions (Moustaka & al., 2012). Individuals experience it when they perceive being the source of a precise behaviour (Bartholomew & al., 2011). It involves a sense of having the choice to determine one's own path. Chang & al. (2015) point out that a person whose need for autonomy is met is free from pressure and from the anxiety it generates. This allows the individual to fully engage into the task, with a renewed feeling of vitality.

Finally, the need for relatedness refers to the addition of two feelings: being connected to others in the social surrounding, and having the sensation of belonging to it (Bartholomew & al., 2011; Moustaka & al., 2012). As expresses by Sarrazin & al. (2011), it implies perceiving support from others, as they display comprehension, warmth, kindness and even affection.

Chang & al. (2015) underline that once this need is met, people "feel that they have a secure interpersonal base". It helps diminishing external restlessness as the environment appears less thwarting.

SDT does not only define these three parameters, but also investigate how to impact them, as it stipulates that the social environmental settings can either facilitate or thwart autonomous motivation by influencing those needs (Bartholomew & al., 2011; Ryan & Deci, 2000)

2.2.2. Influences of Social Environment

Ryan & Deci (2000) considers environmental factors as potential agonists or antagonists to self-motivation and hence, to personal well-being. As the Basic Psychological Needs are key elements to enhance/threaten autonomous motivation, components influencing them have an incidence on the level of internalisation.

First, a person has to receive advice and encouragement from his/her surrounding to enhance competence during the task. Yet, as underlined by Moustaka & al. (2012), this does not stop at the communication and collaboration stages: to bolster this feeling, there is a need for positive feed-back such as producing the desired outcomes, or preventing the undesired ones. This helps to boost the sense of confidence in the individual and therefore, improves his motivation to engage in the task (Chang & al., 2015). Yet, Vlachopoulos & Michailidou (2006) emphasise that achieving aimed outcomes or avoiding displeasing ones is not enough to trigger a long lasting motivation, as it does not satisfy the two other basic psychological needs.

Concerning the need for autonomy, Sarrazin & al. (2011) report that an interaction which supports it can be described as a desire to reinforce one's partner's motivation by using intrinsic levers. This implies a social environment which fosters initiatives, interests, needs and preferences. On the other hand, a coercive interaction uses extrinsic levers such as pressure, guilt or harshness. It risks the deflection of the partners' motivation, if not destroying it. Hence, relatedness can be a vector feeding the sense of autonomy.

Finally, relatedness and social environment are closely linked. Indeed, the need is met when the person feels connected to the surrounding. As individuals tend to keep close to those who they perceive as caring, they tend to more fully integrate their values and behaviours (Sarrazin & al., 2011). On the other hand, an environment perceived as controlling would tend to repel others and prevent the need for relatedness to be fulfilled. This is well illustrated in the

case of medical treatment. In the health system, barriers are often generated from the relationship between patients and practitioners, the latters being part of the first's social environment as much as they are highly responsible for enhancing the need for relatedness. As pointed out by Lequerica & Kortte, (2010), motivation decreases when patients perceive the caregiver as establishing a relationship where he/she is dominant. A similar assessment is made by Bear & Stockie (2014) who quote the "unequal balance of power between patients and providers" amongst the obstacles to patient adherence to the treatment. Hence, a particular stress has to be put on how professionals connect with patients, and on what kind of climate they create during the interaction.

2.2.3. Motivational Climate

As pointed out previously, the climate created by the social environment has a high influence on motivation depending on how it helps or thwarts the psychological needs' fulfilment. A controlled orientation can result from an environment which has prevented one or several needs. On the other hand, an autonomous motivation results from an environment which has supported and satisfied the three needs. Therefore, as illustrated on Figure 2, a "motivational climate" can be defined as the actions and atmosphere created by the social environment to enhance autonomous motivation via the fulfilment of the psychological needs.

Figure 2: Theoretical virtuous chaining toward autonomous motivation and well-being

This logic has been followed in diverse environments. To illustrate this, here is an example drawn from the physical activity area. For an athlete, psychological climate during training and/or match often lies on the coach's behaviour. Hence, motivational climate highly depends on it. As stated by Appleton & al. (2016), it might be generated when the social-supportive environment created by the coach sustains players' behaviours, awareness and feelings. From a SDT perspective, Reinboth & al. (2004) highlight that such a climate which values athletes as people helps them to fulfil their basic psychological needs. By doing this, the climate supports performance, effort, exercise, collaboration and goal-achievements (Weigand

& al., 2001). It is supposed to trigger autonomous motivation as it helps generate gratification, joy and satisfaction in the athletes (Reinboth & al., 2004).

Following the same scheme, physiotherapists are responsible for assisting patients throughout their rehabilitation. As in France the vast majority of physiotherapists are liberal practitioners, they establish a dualistic relationship with patients and therefore, are important figures in their rehabilitation social environment. Hence, following the logic described in Figure 2, physiotherapists are in charge of generating a motivational climate for the care receivers to support their psychological needs' fulfilment. This is supposed to trigger a greater integration of the treatment values and generate a higher autonomous motivation towards engagement in the therapy. This should allow patients to have a better hold over their body control and finally, to increase their well-being.

Therefore, SDT allied with the notion of motivational climate appear to give an interesting answer to face the statement made by Bassett (2003) and Russell & Bray (2010) about patients' non-adherence and participation decline over time. However, despite this consideration, it seems that little application to physiotherapy can be found in scientific literature.

2.3. Application of the model to physiotherapy: current limits

2.3.1. SDT and physiotherapy in scientific literature

Works such as Ng & al. 's (2012) have investigated how SDT can be beneficial to health outcomes. Through their Meta-analyse, they explore the question of SDT's incidence on health care and health promotion. Their conclusion is that SDT is a "viable conceptual framework" to enhance motivation for health-related behaviours. However, despite the 184 independent data recorded in this investigation, the study never directly quotes physiotherapy. The closest field recorded is "physical activity" (PA). Even if physiotherapists are considered as ideally placed to promote PA (McGrane & al., 2014), they are not the only profession concerned by this subject, nor do they solely focus on it. It leads to the assumption that little work has been conducted over the application of SDT toward rehabilitation in physiotherapy. This view is supported by McGrane & al. (2014), who underline that in scientific literature, SDT is "not widely used in current physiotherapy practise". Just like in Ng & al.'s work (2012), they register that SDT was successfully applied to enhance PA, medication adherence, weight loss and restraining substance consumption (Ng & al., 2012; Silva & al., 2010 ; Williams, McGregor, & al., 2006) but deplore the fact that it was never directly applied to physiotherapy in its full form.

Hence, these results show great promise that SDT might benefit physiotherapy practise but there is yet to produce evidence. This is also the conclusion held by McGrane & al. (2014) who insist that SDT could help patients in rehabilitation to improve their motivation and adherence toward "exercise programme and/or health behaviour changes".

2.3.2. Absence of the "motivational climate" notion in physiotherapy literature

"Motivational climate" is a notion which conveys the idea of a possible positive impact through the influence of social environment. In physiotherapy literature, some studies make statements which are close to this idea, giving insight on its application in a rehabilitation context. For example, Murray & al. published a trial in 2015 about SDT-based communication skill training to help physiotherapists enhance patients' psychological needs. The authors consider it to be the first study of the sort. By the end of it, the conclusion was that training physiotherapists with SDT-based guidance was correlated with creating a "needs supportive environment" for patients. Therefore, this work seems to imply that by giving physiotherapists hints to improve the climate they generate, they trigger a higher motivation by fulfilling the psychological needs. This would fit the description of a "motivational climate". Thus, this term would be well-fitted to describe the way physiotherapists could be autonomy-supportive with their patients. However, despite being found in close areas such as PA studies, it seems that the notion of "motivation climate" is never directly used in the physiotherapy scientific literature. By structuring the approach of social environment's influence on patients in rehabilitation through the term "motivational climate", practitioners could rely on established models to help them structure their actions and behaviour towards care-receivers.

2.3.3. Lack of a motivation scale in a context of rehabilitation

Finally, the idea to combine SDT model and the notion of "motivational climate" to the practice of physiotherapy is to help practitioners and patients create the conditions for enhancing the latter's motivation. However, to perceive if such a result is achieved, physiotherapists need a tool to do so. Despite scientific literature being filled with motivation scales in various domains, very few can be found in the physiotherapy area and most of them rely on evaluating patients' participation during sessions. As explained in Kortte & al.'s work, (2007), this assumption is anchored in the belief that motivation toward treatment triggers a higher participation in sessions. One of the first attempts to provide a motivation scale in physiotherapy can be found in Lenze & al. 's study (2004). Relying on Maclean & Pound's review (2000), they reach the conclusion that there is no real definition of motivation for

patients in rehabilitation and therefore, that there is no reliable tool to measure it. To address this problem, Lenze & al. (2004) provide the Pittsburgh Rehabilitation Participation Scale (PRPS) which they describe as "a clinician-rated measure that quantifies individuals' participation in their inpatient therapy". It is a 6-points Likert-like scale used by practitioners to evaluate if patients' participation is "none", "poor", "fair", "good", "very good" or "excellent" throughout sessions. Despite their conclusion that this tool can be considered as reliable and valid, the authors admit it presents numerous limitations. Among them can be quoted the use of a single item, which is described as being "somewhat blunt" as it does not allow practitioners to evaluate the "different aspects of participation". This statement is supported by Kortte & al. (2007) who try to provide another scale: the Hopkins Rehabilitation Engagement Rating Scale (HRER). It includes different parameters of patients' participation such as "attitude toward therapy (or) level of understanding (…)". As for the PRPS, the HRER is considered a valid and reliable tool. However, both scales do not directly assess motivation. As previously explained, patients can seriously attend and comply to sessions but still do it because they are afraid of being scolded if they don't. Hence, to look only at patient participation does not necessarily imply long-term motivation or a change of health behaviour. Moreover, the fact that both scales are only based on the caregivers' point of view does not allow patients to express theirs, implying a gap in both the physiotherapist perception and in the collaboration process.

3. Objectives and hypothesis

Scientific literature holds models such as SDT and notions such as "motivational climate" which show promise for an application to physiotherapy by enhancing patients' motivation. However, few research in physiotherapy is based on SDT and "motivational climate" frameworks. As a consequence, there is a lack of tools to measure motivational climate and motivation during rehabilitation. Therefore, the objective of this work is to investigate whether or not **physiotherapists promote autonomous supportive motivational climate toward patients, and what are its consequences.**

To do so, the hypothesis are that (a) a supportive need climate created during sessions triggers patients' autonomous motivation toward rehabilitation, even when the physiotherapist is not present (Home-Rehabilitation), (b) that the climate can influence subjects' satisfaction and finally (c) that the climate can have an effect on the approach/avoidance engagement of patients toward their treatment.

4. Method

4.1. Participants

The population selection criterions were to speak French and to be in a rehabilitation process in physiotherapy. The protocol was launched shortly before the Covid-19 health crisis stroke, stopping the data collection earlier than expected. Hence, the number of subjects is smaller than what was originally forecasted. The final population is composed of 45 women and 13 men (N = 58). The mean age is 26,4 years, ranging from 18 to 73. Fifty per cent of the participants are under 22 years and 75% is under 24.

4.2. Procedure

To evaluate the different hypothesis, a questionnaire was created in French (Appendix I). Two versions were edited: one on paper and one online. This was done to ease the access and treatment of its results. The paper version was conceived on Word ® 2013 and the online version was published using LimeSurvey ®. A QR-Code was also created to facilitate access to the internet version, thanks to QR Code Generator (Appendix II). It is a free website which allows the creation of QR-Code for Uniform Resource Locator (URL) address.

To target physiotherapists' patients, practitioners were contacted through social media to display the questionnaire in their waiting room by hanging the QR code on the wall and/or by disposing paper versions on tables. The goal was to incite patients to use their waiting time before a session to fill in the form, especially if/when practitioners are a bit behind schedule. This was presented as a win-win situation to rehabilitators, as they would both help with scientific research and be less stressed over being delayed, as patients would be occupied.

Participation was based on free will. Before any questions, patients were informed through a text about the study (Appendix I): its framework with the French University of Nantes, its goals, the average time it would take to answer it and the insurance that any piece of information provided would strictly be anonymous and confidential. Then, patients had to fill in a free and informed consent form, testifying they understood and accepted the conditions of the study. The author's mail address was also provided for any further questions.

4.3. Measures

4.3.1. Demographic characteristics

Ninety questionnaires were collected. Among them, 32 were excluded as all questions except “sex” and “age” were not answered. The final effective of the database retained for statistical analyses was 58. Based on sex and age, the sub-sample of 32 excluded from the analyses was not significantly different from the 58.

Regarding the rehabilitation background of the population 46,6% of the patients already had superior or equalt to 1 rehabilitation and 41,4% had done it with a different practitionner than the current one. The main reason for switching to another practitioner was that the previous practice was geographically too far away from them.

Regarding their current rehabilitation, 56,9% of the subjects had attended 1 to 15 sessions, with a rythme of 1 to 2 sessions per week for 79,3% of them (Appendix III). Figure 3 shows the repartition of sessions since the beginning of the process according to gender. The main outcome is that patients who underwent a number superior or equal to 30 sesions are mainly females (26,7%). Figure 4 shows that 50% of the subjects who had between 1 and 5 sessions consider to be at the beginning of the rehabilitation process, while 37,5% who had 11 to 15 sessions consider themselves at the end. However, 45% of those who had superior or equal to 30 sessions mainly consider being at the middle of the process.

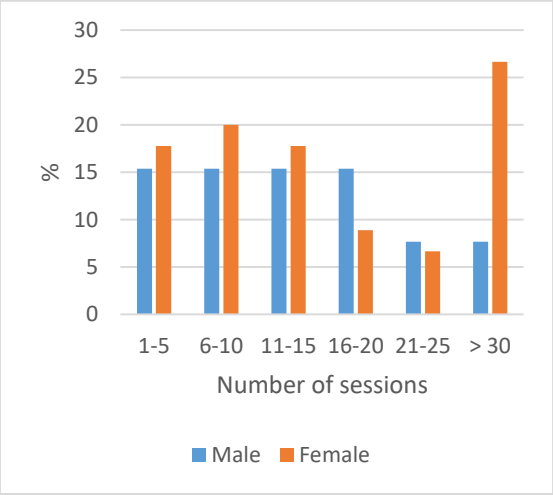


Figure 3: Repartition of sessions since beginning of physiotherapy treatment according to gender

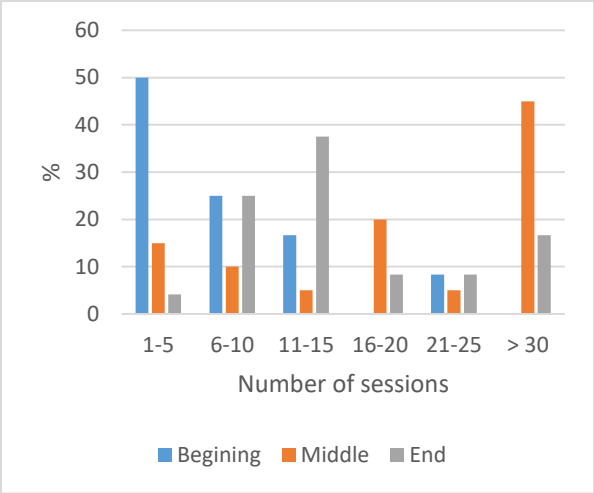


Figure 4: Stage of rehabilitation according to number of sessions

The main cause for rehabilitation is “Musculoskeletal” problems (62 %), as represented in Table 1. No significant difference was found between pathologies when looking at the genders (data not shown).

	Musculoskeletal Pathology	Traumatic Pathology	Orthopaedic Pathology	Neurology Pathology	Other Pathology
%	62,0	17,2	12,0	1,7	6,9

Table 1: Patients repartition according to their pathology

The pain triggered by these pathologies was scored on a 11-point Likert-like scale (0 being “no pain” and 10 being “worst pain possible/imaginable”). It was rated superior or equal to 3/10 (mild intensity) for 58,6 % of the subjects (data not shown). The mean pain for the male population is 2,6/10 and the mean pain for the female population is 3,9/10. All the subjects who scored pain > 5/10 were females, as presented on Figure 5.

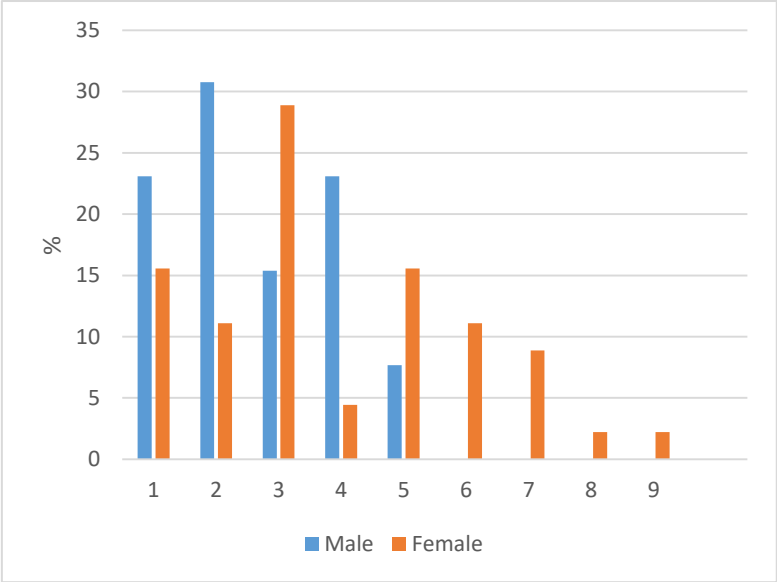


Figure 5: Pain scores according to gender

4.3.2. Coping Strategies Questionnaire (CSQ-F)

The questionnaire used to evaluate the way people cope with pain is the French adaptation of the Coping Strategies Questionnaire (CSQ-F) (Irachabal & al., 2008). It is a 4-point Likert-Like scale, with 1 = never, 2 = sometimes, 3 = often and 4 = very often. The original version, conceived by Rosenstiel & Keefe (1983), is a 48 item scale and is widely used to appraise pain coping strategies (Irachabal & al., 2008). The version used here only has 21 items, as the ones concerning "self-encouragement" has been supported by too little "internal consistency" in its French evaluation. The remaining items can be clustered into 5 different strategies to cope with pain: *reinterpreting* (ex: "I imagine the pain outside my body"), *distraction* (ex: "I try to think of something pleasant"), *catastrophizing* (ex: "I feel like I can't go on"), *prayer* (ex: "I pray that the pain would go away") and *ignorance of the pain* (ex: "I pretend the pain is not here").

4.3.3. Perception of health climate care

Physiotherapists have to accommodate their reaction to produce the health care climate which fit the interlocutor and be able to enhance motivation. Hence, the Health Care Climate Questionnaire was initially selected as a way to measure if patients perceive their rehabilitator as autonomy-supportive. It is a 15-item one designed to address patients with a problem of obesity (Chan & al., 2009). It has frequently been used over the past decades to evaluate the needs' supportive behaviour in diverse areas such as medical treatment, PA and physiotherapy

(Chan & al., 2009; Moustaka & al., 2012; Murray & al., 2015). Then, a shorter version was selected: the Brief Health Care Climate Questionnaire (BHCCQ) (question 12). Indeed, the full questionnaire is fairly long and one of the main risks is that those who fill in the form would grow weary. It is an approved 6-item version (Appleton & al., 2016) which has been validated in English and in French in Czajkowska & al.'s work (2017). It is considered a reliable tool both for Anglophone and Francophone population. As in its original form, the BHCCQ is a 7-point Likert-like scale, ranging from 1 ("strongly disagree") to 7 ("strongly agree") (Chan & al., 2009; Czajkowska & al., 2017).

4.3.4. Satisfaction toward current rehabilitation in physiotherapy

To evaluate the satisfaction scale, a Likert-like version was used for satisfaction towards the current rehabilitation in physiotherapy (question 11). As for the pain NRS, the satisfaction NRS is used in areas such as medical treatment (van Berckel & al., 2017). It is an 11-point scale with 0 being "not satisfied at all" and 10 being "totally satisfied".

4.3.5. Home-Rehabilitation

Motivation was assessed through patients' attitude toward Home-Rehabilitation (HR) (question 13). Two 11-points Likert-like scales used: first, a scale about the "intention" to do HR (0 being "no intention to do my HR exercises" and 10 being "maximum intention to do my HR exercises") and second, its actual "achievement" (0 being "no achievement of HR exercises" and 10 being "maximum achievement of HR exercises").

4.3.6. Patients' strategies toward rehabilitation in physiotherapy

To evaluate how patients react and adapt themselves while facing the rehabilitation process, the French Approach-avoidance System Questionnaire (AASQ) was selected (question 14) (Teboul & al., 2019). It is composed of 12 items clustered in 3 groups, one for each of the following factors: *competence expectancies*, *benefit for the self* and *threat for the self*. It is a 5-point Likert-like scale, 1 meaning "I completely disagree" and 5 "I completely agree". The hypothesis is that patients perceiving physiotherapists as displaying a motivational climate (measured through the BHCCQ) should also show high competence expectancies, high benefit for the self and low threat for the self.

5. Results

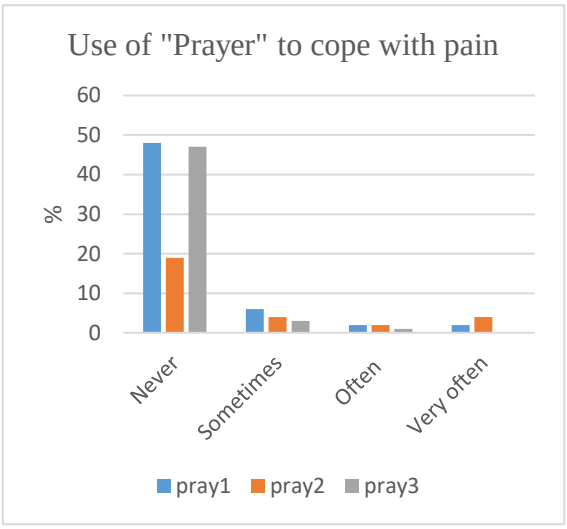
Data analyses were performed using STATA 12.0 (Stata Statistical Software: Release 12. College Station, TX: StataCorp LP. StataCorp). Mean and Pearson's correlations were used to conduct descriptive analyses and to study relationship between variables of interest.

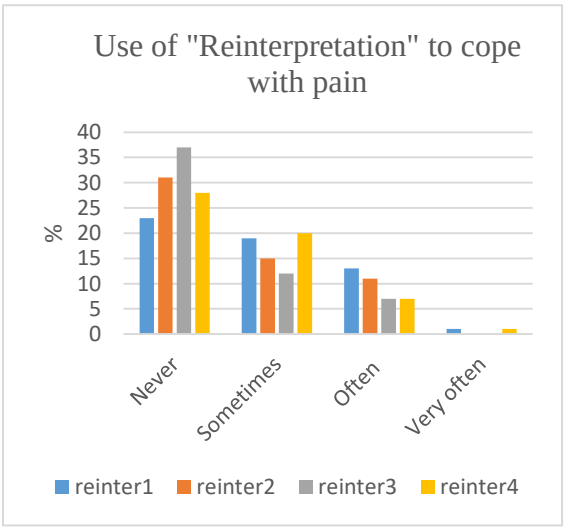
5.1. Descriptive statistics

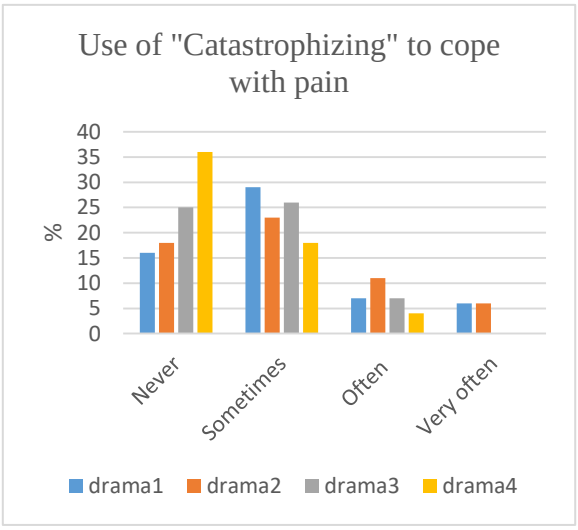
Variables	Ranges	Items	Mean	Std. Error	[95% Conf. Interval]
Pain Strategies	1 to 4	**Prayer**	1,37	0,07	[0,22-0,51]
		Reinterpretation	1,68	0,09	[0,51-0,86]
		Ignore	2,37	0,08	[1,22-1,52]
		Distract	2,32	0,09	[1,14-1,50]
		Catastrophizing	1,82	0,08	[0,65-0,99]
Climate	1 to 7	**Information (I)**	5,52	0,23	[5,05-5,99]
		Understand (U)	5,89	0,18	[5,54-6,25]
		Trust (T)	5,88	0,19	[5,50-6,25]
		Question (Q°)	4,89	0,27	[4,35-5,44]
		Account (A)	5,21	0,23	[4,76-5,67]
		Suggest (Su)	5,32	0,21	[4,91-5,74]
Satisfaction	0 to 10	**(Sa)**	7,80	0,25	[7,30-8,30]
HR	0 to 10	**Intention (i)**	8,07	0,23	[7,61-8,54]
		Achievement (a)	6,82	0,35	[6,11-7,53]
Approach/ Avoidance Strategies	1 to 5	**Threat (Thr)**	3,08	0,18	[2,71-3,45]
		Competence (Comp)	3,89	0,14	[3,62-4,17]
		Benefit (Ben)	3,78	0,16	[3,47-4,09]

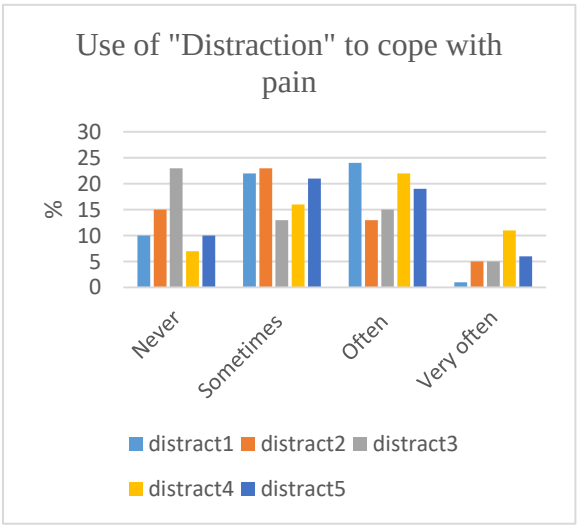
Table 2: Mean, Standard Error and Confidence Interval scores

5.1.1. Pain strategies









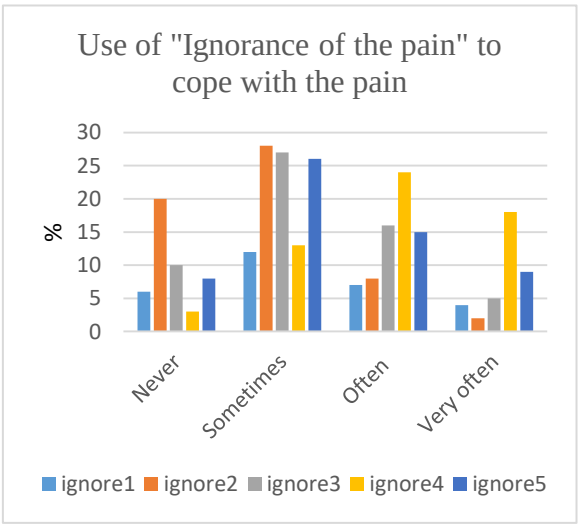


Figure 7: Proportions of patients according to pain strategies

While facing pain and disease, five different strategies of pain coping were recorded through the CSQ-F. All categories showed good intra-class correlations (Appendix IV). However, it can be noticed that the "prayer" way of coping is never used by 83% of the subjects (Figure 7), with a mean score of 1,37 (Table 2). "Reinterpretation" and "Catastrophizing" have lukewarm results, with mean scores of 1,68 and 1,82 respectively (Table 2) and the "never" answerer accounting for 23% and 16% (Figure 7). On the other hand, "Distraction" and "Ignorance of the pain" appear to be the main strategies used by the subjects, with mean scores of 2,32 and 2,37 respectively (Table 2) and 10% and 6% of "never" answers (Figure 7).

5.1.1. Climate

As presented in Table 2, the climate variables are quite homogenous with mean scores in between 5,21 and 5,89 for 5 of the items. The only exception is for question 12.d: "My physiotherapist encourages me to ask questions" ("Mon/ma kinésithérapeute m'encourage à poser des questions"), with a mean score of 4,89. No significant difference was found between women and men (data not shown).

5.1.2. Satisfaction toward current rehabilitation in physiotherapy

Satisfaction mean score is 7,80 (Table 2), with 62% of answers being between 7 and 10. However, when looking at the repartition per gender (Figure 8), women tend to be less satisfied by the treatment compared to men: females represented all scores between 2 and 4.

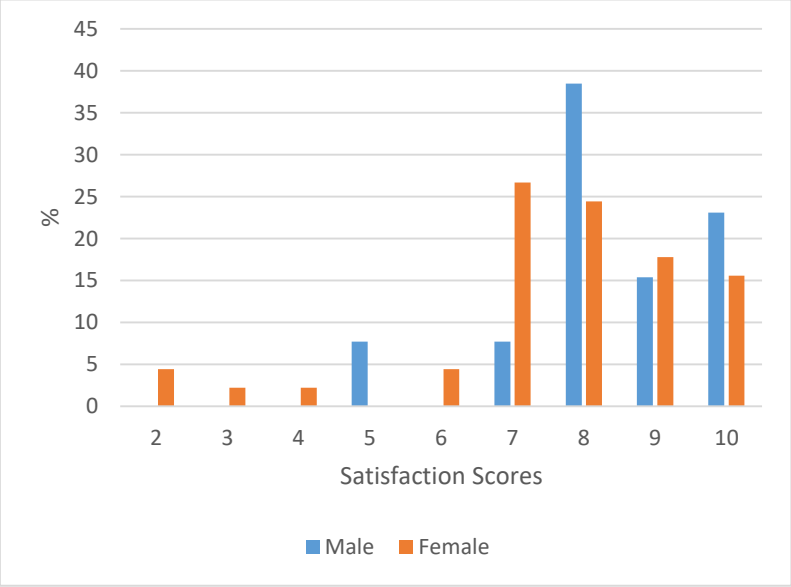


Figure 8: Proportion of satisfaction scores according to gender

5.1.3. Home-rehabilitation (HR)

When asked if they had HR, 81,8% of the subjects answered “yes”. Amoung them, all men were present (Appendix V). The “intention” variable reached a mean score of 8,07 and the “achievement” one of 6,82 (Table 2). A significative difference was found between the genders, women displaying lower mean scores thant men (Appendix VI).

5.1.4. Approach/Avoidance Strategies (A/A Strategies)

The Approach-Avoidance System Questionnaire (AASQ) is used to perceive patients’ state of mind toward their objectives. First, intra-classes correlations were established to check internal consistency. All 3 groups obtained strong intra-class correlations (Appendix VII).

Then, mean scores were calculated per subvariables. As visible on Table 2, the “Threat” sub-variable obtained a mean score of 3,08, the “Competence” one reached 3,89 and the “benefit” one obtained a score of 3,78.

5.2. Correlations

Relationship between Climate and HR, Climate and Satisfaction, Climate and Approach/Avoidance strategies, HR and Approach/Avoidance strategies, HR and Satisfaction will be examined.

		HR			Climate						Approach/avoidance Strategies		
		i	a	Sa	I	U	T	Q°	A	Su	Thr	Com	Ben
HR	i	1,00											
	a	0,70*	1,00										
Satisfaction		0,36*	0,30	1,00									
Cli-mat	I	0,41*	0,37*	0,45*	1,00								
	U	0,24*	0,28	0,52*	0,50*	1,00							
	T	0,28*	0,39*	0,39*	0,76*	0,52*	1,00						
	Q°	0,26	0,32	0,47*	0,70*	0,41*	0,64*	1,00					
	A	0,28*	0,15	0,32*	0,77*	0,58*	0,59*	0.68*	1,00				
	Su	0,19	0,09	0,21*	0,71*	0,52*	0,53*	0,70*	0,88*	1,00			
A/A Strat	Thr	0,26*	0,40*	0,15	0,37*	0,13	0,32*	0,30	0,24	0,23	1,00		
	Com	0,36*	0,23	0,48*	0,34*	0,13	0,21	0,26	0,16	0,14	0,07	1,00	
	Ben	0,20	0,24	0,04	0,33*	0,17	0,33*	0,32	0,24	0,28	0,57*	0,04	1,00

* $p < 0,05$

HR : “i" = intention; “a” = achievement

Climate: “I” = Information; “U” = Understand; “T” = Trust; “Q°” = Question; “A” = Account; “Su” = Suggest

A/A Strategies: “Thr” = Threat for the Self; “Com” = Competence expectancies; “Ben” = Benefit for the Self

Table 3: Pearson’s correlations between “HR”, “Satisfaction”, “Climate” and “Approach/Avoidance Strategies” variables

5.2.1. Climate and Home-Rehabilitation

As presented in Table 3, the “Climate” and the “HR” display a positive correlation above 0,20 for “intention” except for [Suggest-HRintention] (r = 0,19).

For “achievement,” two items of the BHCCQ only weakly correlated with it: [Suggest-HRachievement] (r = 0,09) and [Account-HRachievement] (r = 0,15).

5.2.2. Climate and satisfaction

“Climate” and “Satisfaction” variables are positively correlated, as visible on Table 3: r = 0,45 ($p < 0,05$) for [Information-Satisfaction]; r = 0,52 ($p < 0,05$) for [Understand-

Satisfaction]; r = 0,39 (p < 0,05) [Trust-Satisfaction]; r = 0,47 (p < 0,05) for [Question-Satisfaction]; r = 0,32 (p < 0,05) for [Account-Satisfaction]; r = 0,21 (p < 0,05) for [Suggest-Satisfaction]).

5.2.3. Climate and Approach/Avoidance Strategies

Most correlations between AASQ variables (all items of each sub-variable combined as one) and "Climate" are positive and superior to 0,20. However, exceptions can be quoted: correlations between the item "Understand" (BHCCQ) and the items of the AASQ are under 0,20 (r = 0,17 for [Understanding-Benefit], r = 0,13 for [Understanding-Threat] and [Understanding-Competence]). Moreover, a similar observation can be made for [Account-Competence] (r = 0,16) and [Suggest-Competence] (r = 0,14) (Table 3).

5.2.4. HR and Approach/Avoidance Strategies

Most correlations are between r = 0,20 and r = 0,26 but two of them are superior: [competence- HRintention] (r = 0,36; p < 0,05) and [Competence-HRachievement] (r = 0,40; p < 0,05) (Table 3).

5.2.5. HR and Satisfaction

Positive correlations can be observed on Table 3 between [Satisfaction-HRintention] (r = 0,36; p< 0,05) and [Satisfaction-HRachievement] (r = 0,30).

6. Discussion

In this study, the aim was to get an ascertainment on whether or not physiotherapists display an autonomous supportive climate toward patients, and how it may impact patients (motivation, satisfaction and A/A strategies). Results for the "climate" variable indicate that most subjects perceive a positive, autonomy-supportive climate. All three hypothesis (a, b, c) also appear to be partially or totally supported by the outcomes of the study, implying that the climate does indeed have an incidence on HR, Satisfaction and A/A Strategies.

Determining if physiotherapists display an autonomous motivational climate

Results for the "climate" variable indicate that most subjects have a good relationship with their physiotherapist. They trust him/her, feel understood and listened to. Hence, their need for relatedness is answered (Sarrazin & al., 2011). Patients also perceived their practitioner as confident toward their ability to change, which nurtures their need for competence

(Bartholomew & al., 2011). Finally, they considered being offered choices and options, which enhance their need for autonomy as it triggers a feeling of being responsible their actions (Moustaka & al., 2012).

However, one item singles itself out: “My physiotherapist encourages me to ask questions”. This can be linked with a clinical observation: asking a caregiver “why” or “how” he/she conduct the treatment often makes patients uneasy. Indeed, the prerequisite though when consulting a “professional” is that he/she knows what he/she is doing. This also applies to a rehabilitation treatment: if physiotherapists do not emphasize that patients should feel free to ask, they tend to stop themselves to. However, in everyday practise, many reasons can lead a physiotherapist to skip this part: by either forgetting it, believing to have emphasized it enough or simply because they are unsure of their actions. Hence, a special attention should be given to this side of the climate in future studies.

Hypothesis (a): relationship between the climate and patients’ motivation toward the treatment

Consistent with our hypothesis, the results show that climate is associated with HR, partially supporting hypothesis (a). However, all items did not show the expected correlations. The “Suggest” item of the BHCCQ (“*My physiotherapist tries to understand how I see things before suggesting a new way to do things*) has no influence both on the “intention” and “achievement” of HR. This might be explained by the fact that patients are put in a passive attitude (is listened to) whereas the professional is the active one (suggesting new ways). This supposition is supported by Ruiz & al.'s work (2016), which reaches the conclusion that a “perceived task-involving climate” can positively predict “autonomous motivation”. Here, the “listening approach” may not be involving and empowering enough to trigger autonomous motivation toward home-rehabilitation.

The “Account” item of the BHCCQ (“*My physiotherapist listens to how I would like to do things”*), displays a positive correlation with “HR intention”. However, it did not with “HR achievement” (r = 0,15): the impact was not strong enough to help patient bridge the gap between the “intention” to the action. If following the same logic than for the “Suggest” item, “achievement” might have been reached if the practitioners had put their knowledge to help patients concretise their idea, rather than incorporating them in their own patterns. Further investigations are needed to confirm this new hypothesis.

Hypothesis (b): relationship between the climate and patients' satisfaction toward the treatment

Consistent presented in the results, all items of "Climate" are positively correlated to "Satisfaction", which seems to support hypothesis (b): a climate perceived as autonomy-supportive triggers a higher satisfaction among patients. On the other hand, a climate considered as controlling would tend to diminish the level of satisfaction toward the treatment. This is consistent with previous studies such as Reinboth & al.'s (2004), which states that a motivational climate generate gratification, joy and satisfaction.

Hypothesis (c): relationship between the climate and patients' Approach/Avoidance patterns toward the treatment

Consistent with our hypothesis, the results show that "Climate" is associated with "Approach/Avoidance Strategies" (A/A strategies). However, some correlations differed from what was awaited. Correlations between the item "Understand" ("*My physiotherapist tries to understand how I see things before suggesting a new way to do things*", BHCCQ) and the items of the AASQ are under 0,20. This suggests even when patients feel understood, it is not enough to impact their perception of competence and benefits, nor does it reassures them on treatment outcomes. This could be explained by the fact that the listening/understanding process are mainly located at the beginning of the treatment. On the other hand, the feeling of competence tends to emerge later, from the experience gained throughout the program. It also appears when patients start to observe positive outcomes, which triggers a decrease of fear. All this helps to answer patients' expectancies and create new ones. It might explain that [Account-Competence] and [Suggest-Competence] also had "r" inferior to 0,20. Listening to "*how (the patient) would like to do thing*" and trying to "*understand how (the patient) see(s) things before suggesting a new way to do things*" are important elements to achieve positive treatment outcomes, but are not yet answers to patients' expectancies. Hence, results show that the climate has some impact on patients' A/A strategies toward the treatment (hypothesis c) but further investigations are needed to confirm this link.

Influences between Approach/Avoidance patterns and Home-Rehabilitation

Though not directly linked with a hypothesis, the positive correlations between "A/A strategies" and "HR" bring interesting information. It implies that the strategies chosen by the patients have an impact on their motivation to do their home-rehabilitation. On the other hand,

the way their home-rehabilitation is conducted influences patients' A/A strategies. This is particularly visible through 2 pairs of correlations. The first one is the [Competence-HRintention] pair, expressing that the more competent the individuals feel, the more their intention to do their HR grows. Self-competence being one of the three psychological needs, it is logical that the more competent a person feels, the more their intention and motivation to take action amplifies, as supported in studies such as Sarrazin & al. (2011).

The second positive correlation between [Threat-HRachievement] suggests that what mainly triggers patients' achievement of HR is their fear of treatment outcomes. At first sight, this could appear as if a cohesive approach was the most efficient way to get patients to achieve their HR. If that were the case, it would seriously undermine the theory about the autonomy-supportive path. However, "Threat for the self" does not signify that the source of motivation lies in the fear of being scolded by the practitioner: but merely in the fear of being self-disappointed or self-deprived. Hence, it is not a sign of practitioners' pressure but one of patient empowerment. It underlines the fact that the subjects care about the results for themselves, and actively act to avoid failing. Thus, the fact that this is highly correlated with the achievement of HR seems to indicate an integrated regulation. However, physiotherapists have to be careful: too many expectations or too much pressure can be deleterious, even if it is self-based. Therefore it is their role to help individuals to keep a balance. Through the climate, health caregivers can ease patients' minds to avoid that the perception of "threat" becomes too important.

Study limitations

The size of the sample was the main limitation of this study. The first reason was the impact of the Covid-19 health crisis which ended the data collections, as people stopped their rehabilitation. Secondly, among the 90 questionnaires which were collected, only 58 subjects were retained. The 32 others had only answered the age and sex questions. There is a high suspicion that the length of the questionnaire was a reason subjects did not completed it. The consequence was that the sample was too small to perform some data analysis such as Structural Equation Modeling (SEM). This type of modelling was supposed to help getting a better understanding of how each variable impacts all the others. This would have refined our analysis which was limited to "simple" correlations.

The age repartition was an important bias as 75% of the subjects are under 24 years. It can be explained by the way the data were collected: all answered questionnaires came from the

online version, which was mostly distributed through social media. The age impacts different levels such as the main pathology in the sample. “Musculoskeletal” is the most represented in this study, and is also the most common reason for patients in their twenties to start physiotherapy treatment.

The gender repartition was also a bias: women are 3,5 times more represented than men, which are only 13 in the present study. When analysing the data, gender often appeared as an important factor, but was always undermined by the unbalanced repartitions between sexes. Hence, further investigations are needed with a larger and more balanced sample to confirm these considerations.

Finally, some analyses were also blocked due to the chosen position of data in the questionnaire. This was the case for the Pain Coping Questionnaire. It was incorporated in the section “Your current state” (“*concernant votre état actuel”*) and not in the one about “Your current rehabilitation in physiotherapy” (“*Concernant votre rééducation actuelle en kinsithérapie*”), all links between the climate and the PCQ were meaningless. Hence, the impact of the Climate on pain coping strategies was not investigated.

Future research directions

The principal flaw of this study was the size of the sample. Hence, future research should try to investigate these factors with more subjects to enhance the reliability of the results. It would also allow to use models such as SEM to deepen the understanding of interactions between variables. The gender incidence should also be furthered, as the present study presented hints of its importance which could not be explored due to the composition and size of the sample.

Then, the next step would be to test if training physiotherapists to the notion of autonomous motivational climate and SDT helps them in enhancing patients’ motivation. This could be achieved via a cohort study design, allowing to measure and compare the evolution over time.

7. Conclusion

In this study, the aim was to get an ascertainment about whether or not physiotherapists display an autonomous supportive climate toward patients, and how it may influence them. The results indicate that most subjects perceive a positive, autonomy-supportive climate. All

hypotheses appear to be partially or totally supported by the outcomes, implying that the climate does indeed have an incidence on motivation, satisfaction and approach/avoidance strategies.

Hence, this work contributes to produce initial evidence that an autonomy supportive motivational climate is an important parameter for physiotherapists to enhance patients' motivation. This opens perspective for future studies to help the profession transform and adapt. Indeed, one of the main keys to change will probably be through the transformation of the relationship between patients and physiotherapists. The study implies that care-receivers need to be more and more empowered toward their health care. This is up with the time, the internet-age facilitating the spread of knowledge and self-empowerment. Hence, the climate is the perfect mediator between both sides to create a health-partnership.

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Appendix I: Perception and well-being questionnaire for patients in a setting of physiotherapy rehabilitation

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ÉTUDE SUR LE RESSENTI ET LE BIEN-ÊTRE DES PATIENTS DANS LE CADRE DE LEUR RÉÉDUCATION EN KINÉSITHÉRAPIE

Madame, Monsieur,

Vous êtes actuellement en rééducation en kinésithérapie et **votre avis nous intéresse**. Aussi, nous vous sollicitons **pour participer à une étude** menée dans le cadre de mon master 2ème année au sein du Laboratoire "Motricité, Interactions, Performance" de l'UFR STAPS de l'Université de Nantes.

L'objectif de cette étude est de mieux comprendre l'importance des ressentis et du bien-être des patient(e)s dans le cadre d'une rééducation en kinésithérapie.

Nous vous proposons de répondre à un questionnaire dont le temps requis est estimé à **environ 10 minutes**. Certaines questions sont personnelles, aussi nous vous assurons que vos réponses resteront strictement confidentielles et anonymes, et que cette étude ne revêt pas un caractère évaluatif. Leur utilisation se fera strictement dans le cadre de la recherche universitaire, sans possibilité de les relier à leur auteur.

Si vous acceptez de participer à cette étude, nous vous demandons de bien vouloir cocher le formulaire de consentement libre et éclairé qui vous est présenté ci-dessous.

En cochant les deux cases ci-après, j'atteste :

☐ avoir été informé.e de (a) l'objectif de cette étude, (b) que toutes les informations recueillies dans ce questionnaire seront traitées de façon anonyme et resteront confidentielles, (c) que les résultats obtenus à l'issu du traitement de ce questionnaire pourront faire l'objet de publications scientifiques, mais que l'identité des participants ne sera pas révélée, et (d) qu'aucun renseignement pouvant révéler mon identité ne sera dévoilé.

☐ consentir volontairement et librement à participer à cette étude.

Nous vous demandons de bien vouloir répondre le plus sincèrement et spontanément possible à l'ensemble des questions qui vous sont proposées. Il n'y a pas de bonne ou mauvaise réponse.

Pour toute information concernant cette étude, n'hésitez pas à me contacter : Mme HERAUD Chani chani.heraud@etu.univ-nantes.fr

INFORMATIONS GÉNÉRALES

1. **Date :**
2. **Lieu :**
3. **Sexe :**
   □ F □ M
4. **Âge :**

CONCERNANT VOTRE ÉTAT ACTUEL

5. **Votre pathologie est d'ordre :**

□ Musculo-squelettique □ Neurologique

□ Orthopédique □ Traumatique

□ Respiratoire □ Cardiovasculaire

□ Périnéo-sphinctérienne □ Oncologique

□ Autre (précisez) :

6. **Entourez ci-dessous la note de 0 à 10 qui décrit le mieux l'importance de votre douleur actuelle**
   (0 = "pas de douleur" / 10 = "douleur maximale imaginable")

0 1 2 3 4 5 6 7 8 9 10

7. **Indiquez dans quelle mesure les affirmations ci-après correspondent à ce que vous faites / pensez pour faire face votre douleur :**

a. J'essaie de prendre de la distance par rapport à la douleur, comme si elle était dans le corps de quelqu'un d'autre.

□ Jamais □ Parfois □ Souvent □ Très souvent

b. J'essaie de penser à quelque chose d'agréable.

□ Jamais □ Parfois □ Souvent □ Très souvent

c. C'est terrible et j'ai l'impression que jamais ça n'ira mieux.

□ Jamais □ Parfois □ Souvent □ Très souvent

d. Je prie Dieu que ça ne dure pas longtemps.

□ Jamais □ Parfois □ Souvent □ Très souvent

e. Je ne pense pas à la douleur.

□ Jamais □ Parfois □ Souvent □ Très souvent

f. J'essaie de ne pas y penser comme si c'était mon corps, mais plutôt comme quelque chose séparée de moi.

□ Jamais □ Parfois □ Souvent □ Très souvent

g. Je ne porte aucune attention à la douleur.

□ Jamais □ Parfois □ Souvent □ Très souvent

h. Je fais comme si elle n'était pas là.

□ Jamais □ Parfois □ Souvent □ Très souvent

i. Je m'inquiète tout le temps de savoir si ça va finir.

□ Jamais □ Parfois □ Souvent □ Très souvent

j. Je repense à des moments agréables du passé.

□ Jamais □ Parfois □ Souvent □ Très souvent

k. Je pense à des personnes avec lesquelles j'aime être.

□ Jamais □ Parfois □ Souvent □ Très souvent

l. Je prie pour que la douleur disparaisse.

□ Jamais □ Parfois □ Souvent □ Très souvent

m. J'imagine que la douleur est en dehors de mon corps.

□ Jamais □ Parfois □ Souvent □ Très souvent

n. Je continue comme si de rien n'était.

□ Jamais □ Parfois □ Souvent □ Très souvent

o. Je fais quelque chose que j'aime comme regarder la télé ou écouter de la musique.

□ Jamais □ Parfois □ Souvent □ Très souvent

p. J'ai l'impression de ne plus pouvoir supporter la douleur.

□ Jamais □ Parfois □ Souvent □ Très souvent

q. J'ignore la douleur.

□ Jamais □ Parfois □ Souvent □ Très souvent

r. Je compte sur ma foi en Dieu.

□ Jamais □ Parfois □ Souvent □ Très souvent

s. J'ai l'impression de ne plus pouvoir continuer.

□ Jamais □ Parfois □ Souvent □ Très souvent

t. Je pense aux choses que j'aime faire.

□ Jamais □ Parfois □ Souvent □ Très souvent

u. Je fais comme si la douleur ne faisait pas partie de moi.

□ Jamais □ Parfois □ Souvent □ Très souvent

CONCERNANT VOTRE RÉÉDUCATION ACTUELLE EN KINÉSITHÉRAPIQUE

8. Depuis le début de votre rééducation en kinésithérapie, combien de séances avez-vous effectuées?

□ 1 – 5 □ 21 – 25

□ 6 – 10 □ 26 – 30

□ 11 – 15 □ > 30

□ 16 – 20

9. Où pensez-vous en être dans votre rééducation actuelle ?

□ Début □ Milieu □ Fin

10. Actuellement, combien de séance(s) avez-vous par semaine ?

□ 1 □ 2 □ 3

□ Autre (précisez):

11. Entourez ci-dessous la note de 0 à 10 qui décrit le mieux votre satisfaction vis-à-vis de la rééducation actuelle
(0 = « pas du tout satisfait(e) » / 10 = « totalement satisfait(e) »)

0 1 2 3 4 5 6 7 8 9 10

12. Concernant votre rééducation actuelle, indiquez votre degré d'accord avec chacune des propositions suivantes (1 = « non, pas du tout d'accord » / 7 = « totalement d'accord »)

a. Je sens que mon/ma kinésithérapeute m'a informé(e) de mes choix et de mes options.

□ 1 □ 2 □ 3 □ 4 □ 5 □ 6 □7

b. Je me sens compris(e) par mon/ma kinésithérapeute.

□ 1 □ 2 □ 3 □ 4 □ 5 □ 6 □7

c. Mon/ma kinésithérapeute a confiance en mon habilité à apporter des changements.

□ 1 □ 2 □ 3 □ 4 □ 5 □ 6 □7

d. Mon/ma kinésithérapeute m'encourage à poser des questions.

□ 1 □ 2 □ 3 □ 4 □ 5 □ 6 □7

e. Mon/ma kinésithérapeute prend en compte comment je désire faire les choses.

□ 1 □ 2 □ 3 □ 4 □ 5 □ 6 □7

f. Mon/ma kinésithérapeute tente de comprendre mon point de vue avant de suggérer une nouvelle façon de faire les choses.

□ 1 □ 2 □ 3 □ 4 □ 5 □ 6 □7

13. En dehors des séances avec votre kinésithérapeute :

a. Votre kinésithérapeute vous donne-t-il/elle des exercices à faire à la maison ?

□ Oui □ Non

b. Si vous en AVEZ/AVIEZ, entourez ci-dessous la note de 0 à 10 qui décrit le mieux votre intention de faire ces exercices (0 = « aucune intention de les faire » ; 10 = « intention maximale ») :

0 1 2 3 4 5 6 7 8 9 10

c. Si vous en AVEZ, entourez ci-dessous la note de 0 à 10 qui décrit le mieux votre réalisation effective de ces exercices.
(0 = « je ne les fais jamais» / 10 = « je les fais tous, autant de fois que demandé »)

0 1 2 3 4 5 6 7 8 9 10

14. Concernant votre/vos objectif(s) personnel(s) de rééducation (ex : reprendre le sport en compétition dans les 3 mois/pouvoir recommencer à jardiner/pouvoir porter ses petits-enfant dans ses bras…), indiquez votre degré d'accord avec chacune des propositions suivantes
(1 = « non, pas du tout d'accord» / 5 = « totalement d'accord »)

a. Si j'échouais dans l'atteinte de ce but, l'opinion que j'ai de moi-même en prendrait un coup.

□ 1 □ 2 □ 3 □ 4 □ 5

b. Si j'échouais dans l'atteinte de ce but, j'aurais une mauvaise image de moi-même.

□ 1 □ 2 □ 3 □ 4 □ 5

c. Si j'échouais dans l'atteinte de ce but, je perdrais de l'estime de moi-même.

□ 1 □ 2 □ 3 □ 4 □ 5

d. Si j'échouais dans l'atteinte de ce but, cela me ferait douter de ma valeur.

□ 1 □ 2 □ 3 □ 4 □ 5

e. Je me sens à la hauteur de la tâche.

□ 1 □ 2 □ 3 □ 4 □ 5

f. Je pense que je suis suffisamment bon(ne) pour atteindre ce but.

□ 1 □ 2 □ 3 □ 4 □ 5

g. Je me sens capable d'atteindre ce but.

□ 1 □ 2 □ 3 □ 4 □ 5

h. J'estime être en mesure de répondre aux exigences requises pour atteindre ce but.

□ 1 □ 2 □ 3 □ 4 □ 5

i. Si je réussissais à atteindre ce but, ça me donnerait une bonne image de moi-même.

□ 1 □ 2 □ 3 □ 4 □ 5

j. Si je réussissais à atteindre ce but, ça renforcerait l'opinion que j'ai de moi-même.

□ 1 □ 2 □ 3 □ 4 □ 5

k. Si je réussissais à atteindre ce but, je m'en sentirais grandi(e).

□ 1 □ 2 □ 3 □ 4 □ 5

l. Si je réussissais à atteindre ce but, je serais fier(e) de moi.

□ 1 □ 2 □ 3 □ 4 □ 5

CONCERNANT VOTRE/VOS RÉÉDUCATION(S) ANTÉRIEURES EN KINÉSITHÉRAPIE
(Passez si vous effectuez actuellement votre 1ère rééducation)

15. Nombre de rééducation(s) antérieure(s) (sans compter celle que vous êtes en train d'effectuer)

□ 1 □ 2

□ Autre (précisez) :

16. Si vous avez déjà effectué une autre rééducation, votre pathologie était d'ordre (cochez plusieurs cases si plusieurs rééducations) :

□ Musculo-squelettique □ Neurologique

□ Orthopédique □ Traumatique

□ Respiratoire □ Cardiovasculaire

□ Périnéo-sphinctérienne □ Oncologique

□ Autre (précisez) :

17. Combien de kinésithérapeutes libéraux avez-vous vus avant celui/celle que vous avez actuellement?

□ 1 □ 2

□ Autre (précisez) :

18. Avez-vous effectué votre rééducation précédente avec le/la même kinésithérapeute ?

□ Oui □ Non

19. Si non, cité une raison :

□ L'ancien cabinet était géographiquement loin.

□ Mon/ma kinésithérapeute précédent(e) est parti(e) à la retraite.

□ Différentes pathologies, différents spécialistes.

□ Manque de résultats lors de la rééducation précédente.

□ Problème de communication avec mon/ma kinésithérapeute précédent(e).

□ Manque d'écoute de la part de mon/ma kinésithérapeute précédent(e).

□ Autre :

MERCI DE VOTRE PARTICIPATION !

<u>Appendix II:</u> QR-Code poster to be displayed in physiotherapists' waiting room

ÉTUDE SUR LE <u>RESSENTI</u> ET LE <u>BIEN-ÊTRE</u> DES <u>PATIENTS</u> DANS LE CADRE DE LEUR RÉÉDUCATION EN KINÉSITHÉRAPIE

Actuellement en rééducation en kinésithérapie ?

VOTRE AVIS NOUS INTÉRESSE !

Nous vous sollicitons **<u>pour participer à une étude</u>** menée dans le cadre d'un master 2ème année au sein du Laboratoire "Motricité, Interactions, Performance" de l'UFR STAPS de l'Université de Nantes.

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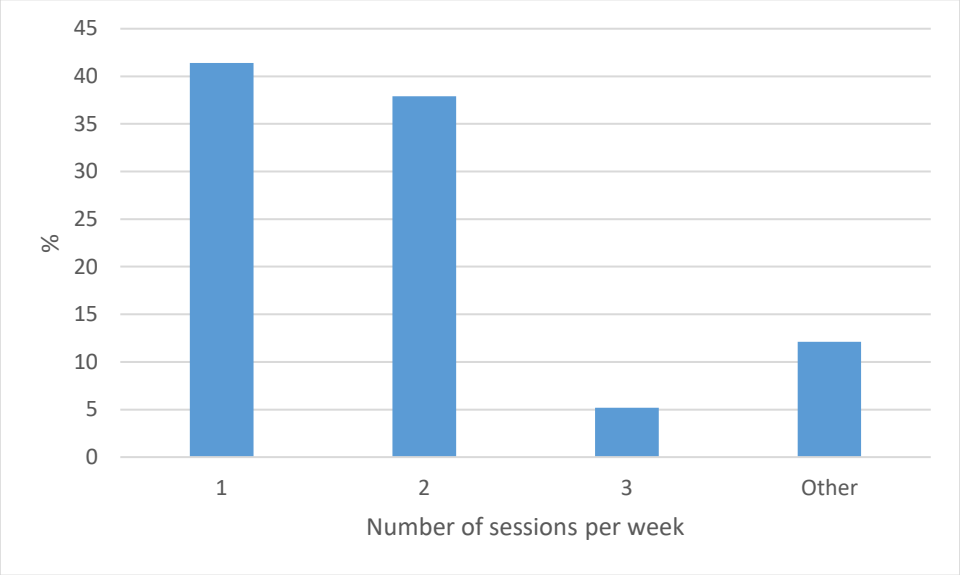
SCAN ME

<u>Ou à l'adresse suivante :</u>

https://questionnaires.univ-nantes.fr/index.php/628628?lang=fr

<u>Appendix III:</u> Patients' proportion according to the number of sessions per week



<u>Appendix IV:</u> Intra-class Pearson correlations for the 5 sub-themes of the French version of the Coping Strategy Questionnaire (CSQ-F)

	Pray 1	Pray 2	Pray 3
Pray 1	1,00		
Pray 2	0,55	1,00	
Pray 3	0,19	0,16	1,00

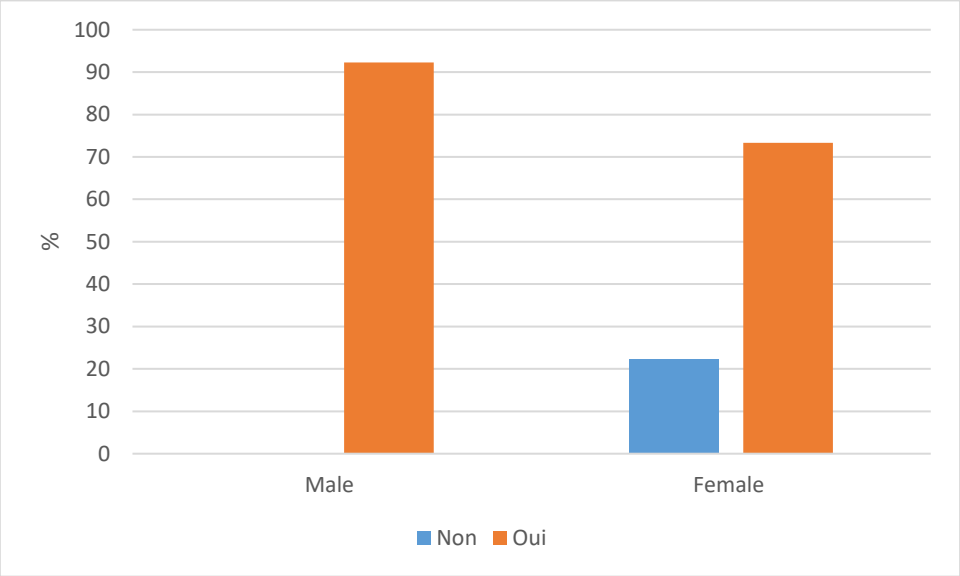
	Reinter1	Reinter2	Reinter3	Reinter4
Reinter1	1,00			
Reinter2	0,43	1,00		
Reinter3	0,47	0,76	1,00	
Reinter4	0,45	0,71	0,77	1,00

	Ignore1	Ignore2	Ignore3	Ignore4
Ignore1	1,00			
Ignore2	0,22	1,00		
Ignore3	0,33	0,58	1,00	
Ignore	0,19	0,25	0,43	1,00

	Distract1	Distract2	Distract3	Distract4	Distract5
Distract1	1,00				
Distract2	0,36	1,00			
Distract3	0,42	0,59	1,00		
Distract4	0,33	0,41	0,37	1,00	
Distract5	0,41	0,54	0,62	0,57	1,00

	Drama1	Drama2	Drama3	Drama4
Drama1	1,00			
Drama2	0,52	1,00		
Drama3	0,54	0,39	1,00	
Drama4	0,55	0,49	0,62	1,00

<u>Appendix V:</u> Percentage of Home-Rehabilitation according to gender



<u>Appendix VI:</u> Mean Home-Rehabilitation scores according to gender

	Male	Female	Global
Mean intention	8,5	7,95	8,07
[95% Conf. Interval.] (Intention)	[7.78-9.22]	[7.4-8.51]	[7.6 - 8.54]

]Mean Achievement	7,50	6,56	6,81
95% Conf. Interval (Achievement)	[6.22-8.78]	[5.72-7.4]	[6.11-7.53]

<u>Appendix VII:</u> Mean, Standard Error and Intra-class Pearson correlations for the Approach/Avoidance System Questionnaire

	Mean	Std. Err	T1	T2	T3	T4	C1	C2	C3	C4	B1	B2	B3	B4
T1	3,4	0,2	1,0											
T2	3,2	0,2	0,8	1,00										
T3	3	0,2	0,73	0,86	1,00									
T4	2,7	0,2	0,62	0,70	0,71	1.00								
C1	3,8	0,16	0,34	0,18	0,08	0,6	1,00							
C2	3,9	0,16	0,15	0,12	-0,01	-0,06	0,63	1,00						
C3	3,9	0,15	0,18	0,02	-0,08	-0,09	0,73	0,71	1,00					
C4	3,9	0,14	0,23	-0,01	-0,14	-0,07	0,80	0,61	0,84	1,00				
B1	3,7	0,16	0,56	0,50	0,52	0,41	0,05	-0,11	-0,12	-0,09	1,00			
B2	3,6	0,19	0,65	0,57	0,52	0,45	0,15	0,02	0,003	0,03	0,89	1,00		
B3	3,6	0,18	0,62	0,47	0,46	0,36	0,14	-0,01	0,003	0,004	0,80	0,88	1,00	
B4	4,1	0,14	0,51	0,38	0,51	0,26	0,21	0,06	0,08	0,1	0,59	0,51	0,57	1,00

T1= Threat 1 = question 14.a / T1= Threat 2= question 14.b / T2= Threat 2 = question 14.c / T4= Threat 4 = question 14.d

C1 = Competence 1 = question 14.e / C2 = Competence 2 = question 14.f / C3 = Competence 3 = question 14.g / C4 = Competence 4 = question 14.h

B1 = Benefit 1 = question 14.i / B2 = Benefit2 = question 14.j / B3 = Benefit 3 = question 14.k / B4 = Benefit 4 = question 14.l

Abstract

The Self-Determination Theory is a model revolving around the notion of motivation, and how to enhance it. This question is central for health practitioners such as physiotherapists: motivation is one of the main levers to trigger long-time health-behaviour changes. Physiotherapists may be able to channel it through the motivational climate they create during rehabilitation sessions. **Objective**: the aim of this study is to get an ascertainment about whether or not physiotherapists display an autonomous supportive climate toward patients, and how it may impact them. **Methods**: a questionnaire was created and 58 complete ones were collected. To evaluate the climate, the Brief Health Care Climate Questionnaire was used. To test its possible impact, correlations were calculated between the climate items and Home-rehabilitation "intention"/"achievement", "Satisfaction" toward treatment and "Approach/Avoidance Strategies". **Results**: positive correlations were established between most of the studied variables. **Conclusion**: all hypotheses appear to be partially or totally supported by the results, suggesting that the climate has an impact on motivation, satisfaction and approach/avoidance strategies. Further investigations are needed to confirm these results as the sample was small and no evolution over time was assessed. However, autonomy-supportive climate rooted in SDT appears to hold great promises to enhance patients' motivation.

Key words

- Physiotherapy
- Self-Determination Theory
- Basic psychological needs
- Autonomous motivation
- Climate
- Co-construction