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# Physiotherapy in acute geriatrics wards: What (de)motivates patients? A qualitative study based on self-determination theory

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## Abstract

**Background** While the benefits of physiotherapy for hospitalized older patients (HOPs) are well established, these patients are often considered demotivated by healthcare team members (HTMs), which is perceived as a hindrance to their rehabilitation. The quantitative data currently available on the lack of involvement of HOPs are mainly measures of mobility. Motivation as such has, to our knowledge, never been measured. Therefore, this study aims to quantify for the first time the motivation levels of HOPs in their participation in activities of daily living (ADLs) and physiotherapy, and to explore the motivating factors behind their participation in physiotherapy.

**Methods** The motivation of 60 older patients hospitalized in an acute geriatrics ward was quantified using the Scale of Demotivation Assessment (SDA). Out of these participants, 14 were interrogated through individual semi-structured face-to-face interviews. After transcription, data were analyzed according to Self-Determination Theory, which has been proven effective in the understanding of motivational mechanisms.

**Results** The prevalence of demotivation was 47% (95% CI: [0.34;0.6]) for ADLs and 35% (95% CI: [0.23;0.48]) for physiotherapy. The main demotivating factors were the feeling of external control (lack of autonomy) and dependance experienced by HOPs, as well as the limited availability of staff during hospitalization. Conversely, feelings of competence, security, respect for limits, and commitment from the HTMs were important motivating factors.

**Conclusion** A large number of relational factors have an impact on the motivation of HOPs regarding their participation in ADLs and in physiotherapy sessions. Appropriate time and space organizing and the provision of suitable equipment, combined with a genuine caring and respectful attitude from the HTMs, could considerably encourage the expression of intrinsic motivation and thus the involvement of HOPs in their own care program.

**Keywords** Physiotherapy, Physical therapy, Older, Acute geriatrics ward, Motivation, Demotivation, Self-determination, Self-determination theory, SDT

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## Background

### Geriatric patients: specific care requirements

Longer life expectancy and decreasing fertility rates are leading to an increase in the global average age [1]. In Belgium, the proportion of people aged 65 and over has risen from 17% in 2002 to 20% in 2022 [2]. As the population ages, the field of research into the health of older people has grown [3], but it wasn't until 2007 that the "Belgian Care Program for the Geriatric Patient" was implemented. Geriatric patients were defined as those aged 75 or over and presenting a certain degree of frailty and reduced homeostasis, active polypathology, an atypical clinical picture, disturbed pharmacokinetics, a risk of functional decline and/or malnutrition, a tendency to remain inactive and bedridden, with a risk of institutionalization and dependence on activities of daily living (ADLs), and/or psychosocial problems [4].

The multifactorial nature of geriatric syndromes makes interdisciplinary management essential, and in this context, physiotherapy has a major role to play [5]. The main objective of physiotherapy in Geriatrics Wards is to limit complications linked to the health situation that led to hospitalization, while aiming for early recovery of function in order to maximize the possibility of returning home [6]. To this end, rehabilitation programs for hospitalized older patients (HOPs) are diversified and generally include gait and balance training, muscle strengthening, and functional exercises based on ADLs [7]. Another major challenge for physiotherapy in Geriatrics Wards is to limit patients' immobility and the complications that can ensue: falls, re-hospitalization, incidents of disability, institutionalization, mortality, etc [8]. Numerous studies looking at the mobility of HOPs have highlighted an important sedentariness and very low levels of physical activity during hospitalization [9–11]: HOPs are said to spend only 6% of their waking hours on their feet [10].

For many caregivers, one of the reasons for the low mobility of HOPs is that they are particularly demotivated [12, 13]. Besides, geriatric patients are often considered "frustrating" and "uninteresting". At a time when the geriatric population is exploding, very few students in the field of care are going into this specialty [3]. In fact, geriatrics is ranked as one of the least prestigious medical disciplines [14]. The authors Hazif-Thomas and Thomas have studied what they call "the demotivation of older people": they consider that older people are fundamentally demotivated, and define this demotivation as "an acquired and learned dynamic of deconstruction of the motivational impulse by the bitter confrontation of older people between on the one hand an autonomy that is waning and on the other a dependence that is not accepted and which paradoxically and unconsciously is sought" [15]. In their view, demotivation is an integral component of frailty in older people, aggravated by the physiological and psychological changes imposed by age [16].

To our knowledge, however, no study has objectified the demotivation of HOPs regarding their involvement in physiotherapy. The prevalence of demotivation was only measured in one long-term care (LTC) facility for older people, in 2020 [17]. A scoping review published in 2021 provided a first overview of studies investigating barriers and facilitators to physical activity in hospitalized patients [18]. While some of these studies provide a good overview of the factors that can positively and negatively influence the mobility of HOPs, none focused on motivation as such, nor did they use motivational theories to classify the identified factors. Yet, as motivation is directly associated with higher levels of physical activity [19], it is essential to develop our knowledge in this area.

### Self-determination theory (SDT)

Developed by Ryan and Deci in the 1980s, self-determination theory (SDT) (Fig. 1) has proved its worth in understanding behaviors, whether related to physical activity or not.

At the basis of motivation theories, two types of motivation involved in behavior have been identified: intrinsic motivation (IM) (i.e. the willingness to perform an action for the direct satisfaction it brings to the individual performing it, and accompanied by positive feelings such as pleasure, excitement, or accomplishment) and extrinsic motivation (EM) (i.e. the willingness to perform an action for an external reference or the need to "do well" for society or one's entourage) [22, 23]. Unlike IM, which is present from birth, EM is the result of responsibilities and social pressures that dictate certain behaviors [20]. EM can be integrated (i.e. the action resonates with the individual's deepest values), identified (i.e. the action is consciously perceived by the individual as beneficial to his or her own person), introjected (i.e. the action is intended to gain the approval or avoid the disapproval of an external reference), or external (i.e. the action is intended to gain a reward or avoid punishment). Amotivation, on the other hand, is described as the total absence of motivation [22].

According to SDT, a behavior is said to be "self-determined" when the source of motivation is internal (IM, integrated EM or identified EM). Motivation is then said to be autonomous. Conversely, a behavior is said to be "hetero-determined" when the source of motivation is external (introjected EM or external EM). Motivation is then controlled [15, 20]. The more a behavior is internally motivated, the more likely the individual is to maintain this behavior in the long term [15]. Self-determination is in fact a continuum, and what motivates a behavior is often a series of several intermediate types of motivation, present simultaneously and influenced by elements specific to them [15]. To promote more integrated types

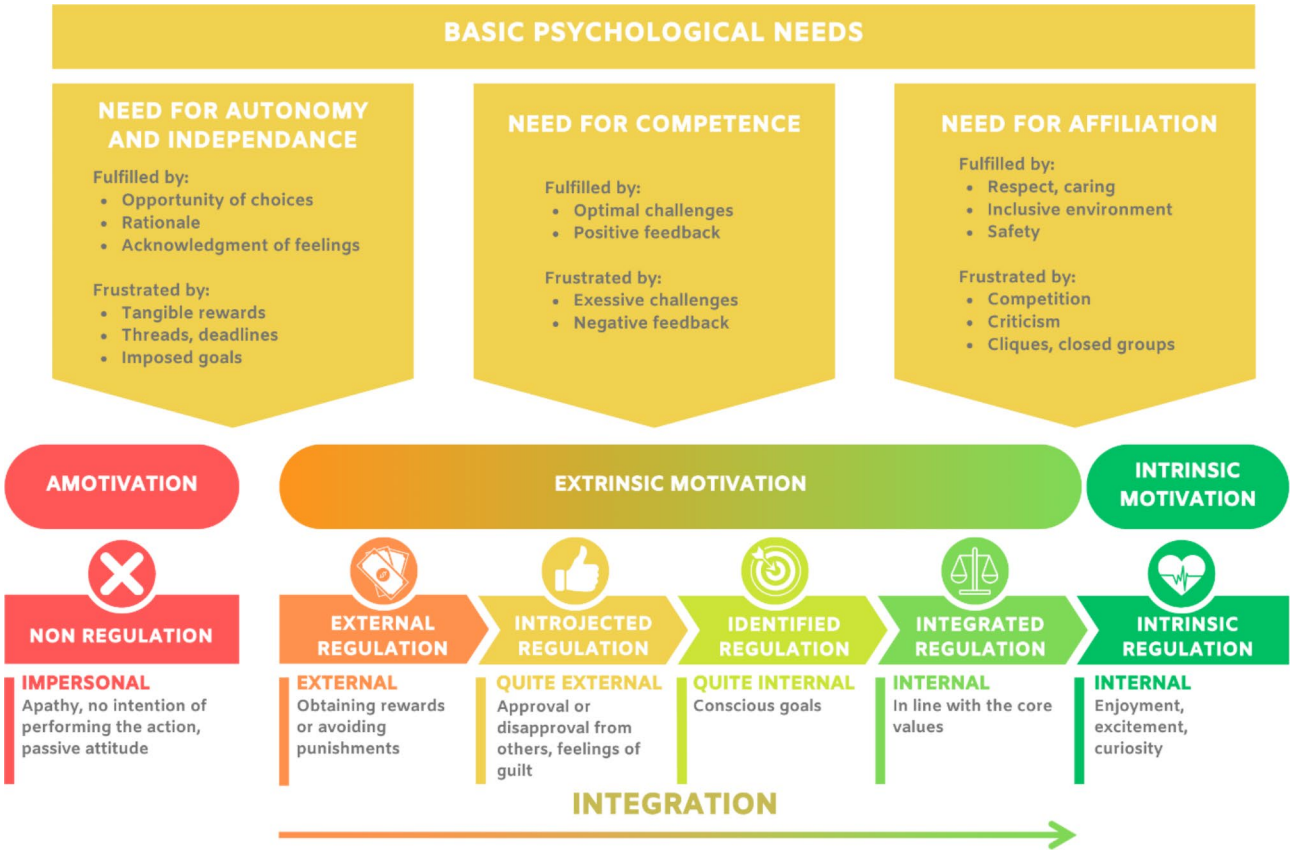


**Fig. 1** – The Self-Determination continuum according to Ryan and Deci [20]. (adapted from Cook and Artino [21])

of motivation, and thus enable the emergence of self-determined behavior, SDT has highlighted three fundamental psychological needs to fulfill [23]. The first is the need for autonomy (i.e. the feeling of having the choice of one's own actions —as opposed to the feeling of control— but also of being independent in the performing of these actions [22]). The second is the need for competence (i.e. the feeling of self-efficacy in one's environment and the feeling of being good at what one does, which stimulates curiosity and the desire to take on challenges) [20, 22]. Finally, the third is the need for affiliation (i.e. the feeling of being connected to others in a secure social environment, in which respect for others and care for the fellow individual are perceptible) [20]. These three fundamental psychological needs are not the only ones involved in motivation [22], but when they are fulfilled in the course of action, they enable the occurrence of intrinsic motivation. Conversely, when these needs are frustrated, intrinsic motivation levels are lower [23].

Paquet et al. have described the effects of old age on self-determination. According to them, the decline in physical and cognitive capacities induced by aging strongly influences the need for autonomy and competence, and the social isolation of older people reduces their sense of affiliation [22].

### Aims of the study

The quantitative data currently available on the lack of involvement of HOPs are mainly measures of mobility [9–11]. Motivation as such has, to our knowledge, never been measured in a hospital setting. Therefore, the first aim of this study is to quantify the level of motivation of HOPs in Geriatrics Wards regarding their involvement in ADLs and physiotherapy. Secondly, in order to understand the subjective experience of these patients, the second objective is to use SDT to understand the factors that motivate or demotivate HOPs to engage in physiotherapy.

## Methods

### Study design

This study combines quantitative and qualitative methodology and follows a sequential explanatory model [24]. The COREQ (Consolidated Criteria for Reporting Qualitative Research) guidelines were followed to ensure accurate reporting of the qualitative study (Additional File 1) [25]. Because of the investigator's (first author) limited experience in qualitative methodology, experts in the field were consulted to ensure proper guidance throughout the study.

### Study context

From November 2022 to February 2023, a number of patients hospitalized in the Geriatrics Ward of the CHU UCL Namur, Belgium, were approached for the purpose of this study. In this department, physiotherapy sessions happen daily for most patients, last on average 20 to 30 min and generally include pedaling on a cycle ergometer, walking exercises and transfer training. Mobilization of the upper and lower limbs, overall muscle strengthening, proprioceptive re-education, etc. may also be included.

Among the authors, only the first author was not employed in the department and, therefore, had no prior relationship with the participants. She was the sole individual to have direct interactions with the participants, both to present the research and to collect data for the qualitative study. The other authors, who worked in the department, did not engage with the participants in the context of the study, as they completed the proxy assessments. The participants were informed that the investigator was interested in the topic of older adults' motivation regarding physiotherapy for her thesis and that their involvement in the study would not affect their care during their hospital stay.

### Data protection

On all paper data collection documents, participants' names were replaced by identification numbers to guarantee the protection of their data. All documents mentioning participants' names, as well as voice recordings, were password-protected throughout the study and erased at the end of it.

### Quantitative methodology

Over a 14-week period, a maximum number of patients hospitalized in the Geriatrics Ward of CHU UCL Namur, were selected for the study. Patients were included in the study if all of the following inclusion criteria were met:

- Their acute condition was stabilized (as determined by the physician in charge);
- Their care program included daily physiotherapy;
- They had been admitted to the department at least 3 days prior.

Patients were excluded from the study if any of the following exclusion criteria were present:

- Cognitive impairment was too severe to allow proper assessment (as clinically determined by the department's physiotherapists and occupational therapist);
- There was an ongoing acute confusional state or an unstable medical condition (as determined by the physician in charge);
- They were receiving palliative or terminal care.

The Scale of Demotivation Assessment (SDA) was designed and validated to assess demotivation in older people (with or without dementia) [26]. This scale was used in its original French language to measure patients' motivation levels for participating in ADLs and physiotherapy sessions. Scoring is similar to a 4-point Likert-type scale. The SDA is used for proxy assessment, therefore the department's occupational therapist completed it for each participant, in collaboration with one of the department's physiotherapists. The higher the score, the lower the motivation, and the cut-off score for demotivation is set in the literature at 35/60 [15]. As the SDA is not specific to physiotherapy, we chose to add a 16th item concerning participation in physiotherapy sessions (Fig. 2). However, this item was considered separately and not included in the total motivation score. For the interpretation of this item, we chose to set the demotivation cut-off score at 2/4. In addition to the level of motivation, descriptive data were collected for each participant.

As the SDA was not originally designed for the hospital setting, it was expected that some items would not be assessable in the field [27]. Thus, after data collection, items with a missing data rate of 20% or more were removed for statistical analysis. Consequently, the total demotivation score for ADLs was adapted (48 instead of 60) and the cut-off score lowered (28 instead of 35). For items with a missing data rate of under 20%, these missing data were imputed using the method of Tabachnick and Fidell [28].

Motivation scores obtained with the SDA were analyzed using Stata IC 17 Software, StataCorp LLC, Texas. The proportion of motivated and demotivated participants (as determined by the binary demotivation cut-off score) was calculated with a 95% confidence interval. Relationships between SDA scores and demographic data were analyzed using the Wilcoxon Rank-Sum Test for continuous variables and the Chi-square Test for categorical variables (except when expected values were under 5, when Fisher's Exact Test was used). The Odds Ratio (OR) and its 95% confidence interval were calculated for each variable using Logistic Regression. The chosen significance threshold (p-value) was 0.05.

### Qualitative methodology

The patients approached for qualitative data collection were selected according to an algorithm set up beforehand, with the aim of diversifying the profiles as much as possible. Individual, face-to-face, semi-directive interviews were conducted using an interview grid specifically

Identification Number: Date:

| | Does the older person | Very often (1) | Often (2) | Sometimes (3) | Never (4) | Not evaluable* |
|---|---|---|---|---|---|---|
| 1 | Take initiative in their daily life? | | | | | |
| 2 | Have hobbies or interests that motivate them? | | | | | |
| 3 | Worry about their health? | | | | | |
| 4 | Prefer getting up rather than sitting still in their chair? | | | | | |
| 5 | Participate in group activities without needing stimulation from you? | | | | | |
| 6 | Speak up without having to be prompted? | | | | | |
| 7 | Show interest in what's happening around them? | | | | | |
| 8 (-) | Feel like they are wasting their time? | | | | | |
| 9 | Make decisions on their own without you having to do it for them? | | | | | |
| 10 | Try to stay busy rather than simply letting time pass? | | | | | |
| 11 | React to external events, happy or sad? | | | | | |
| 12 | React to news (television, newspapers, etc.)? | | | | | |
| 13 | Take pleasure in recalling certain events (personal or public)? | | | | | |
| 14 | Take care of themselves (hygiene, clothing, food)? | | | | | |
| 15 | Find enjoyment in their daily life? | | | | | |

(-) Item 8 is reverse-scored: Very often = 4; Often = 3; Sometimes = 2; Never = 1

| | | | | | | |
|---|---|---|---|---|---|---|
| 16 | Accept their physiotherapy sessions?* | | | | | |

* Item added for the purposes of this study

**Fig. 2** "Échelle d'Appréciation de la Démotivation" (EAD) [26], revised for the purposes of this study and translated into English as the "Scale of Demotivation Assessment" (SDA)

designed for this study (Additional File 2). In addition to the inclusion criteria for quantitative evaluation, participants had to be able to express themselves correctly in French (as clinically determined by the department's physiotherapists and occupational therapist). Furthermore, patients with hearing and/or cognitive disorders too severe for the interview to run smoothly and coherently (as clinically determined by the physician in charge) were excluded from the qualitative evaluation. The interview grid was developed to address the intrinsic and extrinsic components that might be involved in people's motivation. Qualitative methodology being an iterative process, the interview grid evolved throughout the qualitative data collection, which continued until data saturation was reached.

Prior to the qualitative interview, additional descriptive data were collected for each participant, either from their medical records when available, or by directly

questioning the participant: level of education (years of schooling after age 12), main pathologies at the time of hospitalization, daily medications, level of frailty (SEGA [29]), cognitive status (MMSE [30]), depression screening scale score (mini-GDS [31]), level of dependence in ADLs (Katz index [32]) and different types of motivation involved in ADLs (EMS-72 [33]).

The interviews were conducted in each participant's room at a mutually agreed-upon time. The only individuals present during the data collection were the investigator, the participant, and another patient who was staying in the participant's room when they were in a double occupancy room. The interviews were recorded using a battery-operated voice recorder and transcribed verbatim using a word processor (Microsoft Word). Personal names mentioned during the interviews were replaced in the transcriptions by aliases. After transcription, each interview was carefully read and coded extract by extract as part of the thematic analysis process. All interview extracts were then categorized according to their nature and subject matter, before being integrated into the self-determination continuum.

## Results

### Quantitative results

Out of the 132 patients who stayed in the Geriatrics Ward of CHU UCL Namur, during the data collection period, 60 were included for quantitative assessment of motivation (Fig. 3).

#### *Proportion of participants demotivated for ADLs and for physiotherapy*

The proportion of participants exceeding the demotivation cut-off score for ADLs (SDA) was 47% ($n$=28/60; 95% CI = [0.34;0.6]). The proportion of participants demotivated for physiotherapy (item 16) was 35% ($n$=21/60; 95% CI = [0.23;0.48]).

#### *Differences between groups of motivated and demotivated participants for ADLs and for physiotherapy*

The mean SDA score obtained by ADLs-motivated participants was significantly lower than that obtained by ADLs-demotivated participants (respectively 20.6±3.7 and 35.3±4.8; p-value<0.001). With regard to motivation

| Characteristics | | Cohort (n = 60) | Sample for the quantitative assessment (n = 46) | Sample for the qualitative assessment (n = 14) | Differences between samples |
|---|---|---|---|---|---|
| | | Number (proportion) or Mean ± SD (range) | | | p-value |
| Age in years | | 83.9 ± 5.7 (70 – 94) | 83.5 ± 5.6 (70 – 94) | 85.5 ± 5.7 (76 – 94) | 0.258 |
| Gender | Female | 35 (58%) | 28 (61%) | 7 (50%) | 0.47 |
| | Male | 25 (42%) | 18 (39%) | 7 (50%) | |
| Place of living before hospitalization | Home | 56 (93%) | 44 (96%) | 12 (86%) | 0.23* |
| | LTC facility | 4 (7%) | 2 (4%) | 2 (14%) | |
| Level of dependance for transfer and movement | Autonomous (with or without TA) | 36 (60%) | 30 (65%) | 6 (43%) | 0.107* |
| | Human assistance required | 19 (32%) | 14 (31%) | 5 (36%) | |
| | Grabber | 5 (8%) | 2 (4%) | 3 (21%) | |
| Length of hospital stay until assessment in days ($t_1$) | | 13.8 ± 7.9 (4 – 53) | 14.3 ± 8.1 (6 – 53) | 12.2 ± 7.4 (4 – 32) | 0.23 |
| Total length of hospital stay in days ($t_2$) | | 26.5 ± 15.8 (10 – 98) | 27.4 ± 17.2 (10 – 98) | 23.8 ± 9.9 (10 – 43) | 0.766 |
| $t_1/t_2$ proportion | | 0.58 ± 0.24 (0.12 – 1) | 0.59 ± 0.23 (0.12 – 1) | 0.54 ± 0.25 (0.15 – 0.93) | 0.437 |
| Place of living at discharge | Home without increased aid | 16 (27%) | 12 (26%) | 4 (29%) | 0.609* |
| | Home with increased aid | 12 (20%) | 8 (17%) | 4 (29%) | |
| | STC facility | 5 (8%) | 5 (11%) | 0 (0%) | |
| | LTC facility | 18 (30%) | 15 (33%) | 3 (21%) | |
| | Comfort care at home | 4 (7%) | 3 (7%) | 1 (7%) | |
| | Death | 4 (7%) | 2 (4%) | 2 (14%) | |
| | Transfer to another clinic | 1 (2%) | 1 (2%) | 0 (0%) | |
| Demotivation score for ADLs (SDA) | | 27.5 ± 8.5 (14 – 45) | 28.4 ± 8.7 (14 – 45) | 24.6 ± 7.4 (16 – 39) | 0.147 |
| Demotivation score for physiotherapy (item 16) | | 1.4 ± 0.5 (1 – 3) | 1.4 ± 0.6 (1 – 3) | 1.4 ± 0.5 (1 – 2) | 0.967 |

ADLs: Activities of Daily Living; LTC: Long-Term Care; SD: Standard Deviation; SDA: Scale of Demotivation Assessment; STC: Short-Term Care; TA: Technical Assistance

*Fisher's Exact Test because expected value(s) < 5

**Fig. 3** Description of the cohort and samples for quantitative and qualitative evaluations

for physiotherapy, the average score obtained by participants demotivated for physiotherapy was 2.1±0.3.

We compared the characteristics of the "Motivated for ADLs" versus "Demotivated for ADLs" groups (Fig. 4). Age, gender, place of living before hospitalization and length of stay did not differ. Only the level of dependence for transfer and movement was significantly higher among participants who were demotivated for ADLs (OR=3.9 (95% CI = [1.5;10.2]); p-value=0.005). When comparing the "Motivated for physiotherapy" versus "Demotivated for physiotherapy" groups, we found no difference.

### *Relationship between motivation for ADLs and motivation for physiotherapy*

Among participants demotivated for physiotherapy, the level of demotivation in ADLs was significantly higher than the level obtained by participants motivated for physiotherapy (respectively 32.7±7.3 and 24.7±7.8; p-value=0.001). When a participant was demotivated for physiotherapy, the probability of also being demotivated for ADLs was multiplied by a factor of 11 (OR=10.8 (95% CI = [2.9;39.4]); p-value<0.001).

## Qualitative results

The profile algorithm set up beforehand enabled us to select participants with a variety of characteristics, thus obtaining a sample very similar to the sample for the quantitative evaluation (Fig. 3). All potential participants agreed to take part in the study and saturation was achieved after interviewing 14 participants. The duration of the interviews ranged from 12 to 40 min, with an average length of 22 min.

Thematic analysis of the interviews enabled us to identify the various factors that motivated or demotivated participants to engage in physiotherapy. These motivating factors were classified according to the self-determination continuum (Fig. 5).

In addition, six essential needs influencing participants' motivation were identified: the need for autonomy and independence, the need for competence, the need for safety, the need for respect of limits, the need for commitment from therapists and the need for consideration. It should be noted that the last four are in fact sub-categories of the need for affiliation, as they concern the reassuring nature of the social environment and relational factors. The three fundamental psychological needs described by the SDT [20, 23] are thus clearly expressed. These six essential needs sometimes took the form of very concrete conditions determining the participants' level of involvement in physiotherapy: the need for security and the need for respect of limits are examples. In other cases, these needs represented genuine life aspirations, such as the need for autonomy and independence, and the need for consideration. In these cases, physiotherapy was often seen as a way of fulfilling these needs.

### *The need for autonomy and independence*

The feeling of dependence and control was a recurrent theme for many participants. In an acute situation, functional and cognitive decline that had previously been under control is exacerbated. Some participants found themselves violently confronted with their incapacities, and the sudden feeling of dependence often caused real grief (P6: "*And we can't imagine that one day you're going to stick your ass in the armchair! That… That… is hard to*

| Characteristics | | Motivated for ADLs (SDA < 28/48) | Demotivated for ADLs (SDA ≥ 28/48) | Differences between groups | Logistic Regression | | |
|---|---|---|---|---|---|---|---|
| | | Number (proportion) or Mean ± SD (range) | | p-value | OR | 95% CI | p-value |
| Age in years | | 85.1 ± 5.7 (75 – 94) | 82.6 ± 5.4 (70 – 92) | 0.092 | 0.92 | 0.84 – 1.01 | 0.085 |
| Gender | Female | 21 (60%) | 14 (40%) | 0.221 | 0.52 | 0.19 – 1.48 | 0.223 |
| | Male | 11 (44%) | 14 (56%) | | | | |
| Place of living before hospitalization | Home | 31 (55%) | 25 (45%) | 0.331* | 3.72 | 0.36 – 37 | 0.268 |
| | LTC facility | 1 (25%) | 3 (75%) | | | | |
| Level of dependance for transfer and movement | Autonomous (with or without TA) | 25 (69%) | 11 (31%) | 0.005* | 3.91 | 1.50 – 10.19 | 0.005 |
| | Human assistance required | 6 (32%) | 13 (68%) | | | | |
| | Grabber | 1 (20%) | 4 (80%) | | | | |
| Length of hospital stay until assessment in days ($t_1$) | | 12.9 ± 5.9 (6 – 32) | 14.8 ± 9.7 (4 – 53) | 0.682 | 1.03 | 0.96 – 1.1 | 0.375 |
| Total length of hospital stay in days ($t_2$) | | 23.8 ± 12.9 (10 – 74) | 29.6 ± 18.2 (10 – 98) | 0.112 | 1.03 | 0.99 – 1.07 | 0.169 |
| $t_1/t_2$ proportion | | 0.60 ± 0.22 (0.22 – 1) | 0.56 ± 0.25 (0.12 – 0.96) | 0.515 | 0.44 | 0.05 – 3.93 | 0.464 |

ADLs: Activities of Daily Living; CI: Confidence Interval; OR: Odds Ratio; SD: Standard Deviation; SDA: Scale of Demotivation Assessment; TA: Technical Assistance

*Fisher's Exact Test because expected value(s) < 5

**Fig. 4** Comparison of the characteristics of the groups "Motivated for ADLs" versus "Demotivated for ADLs"

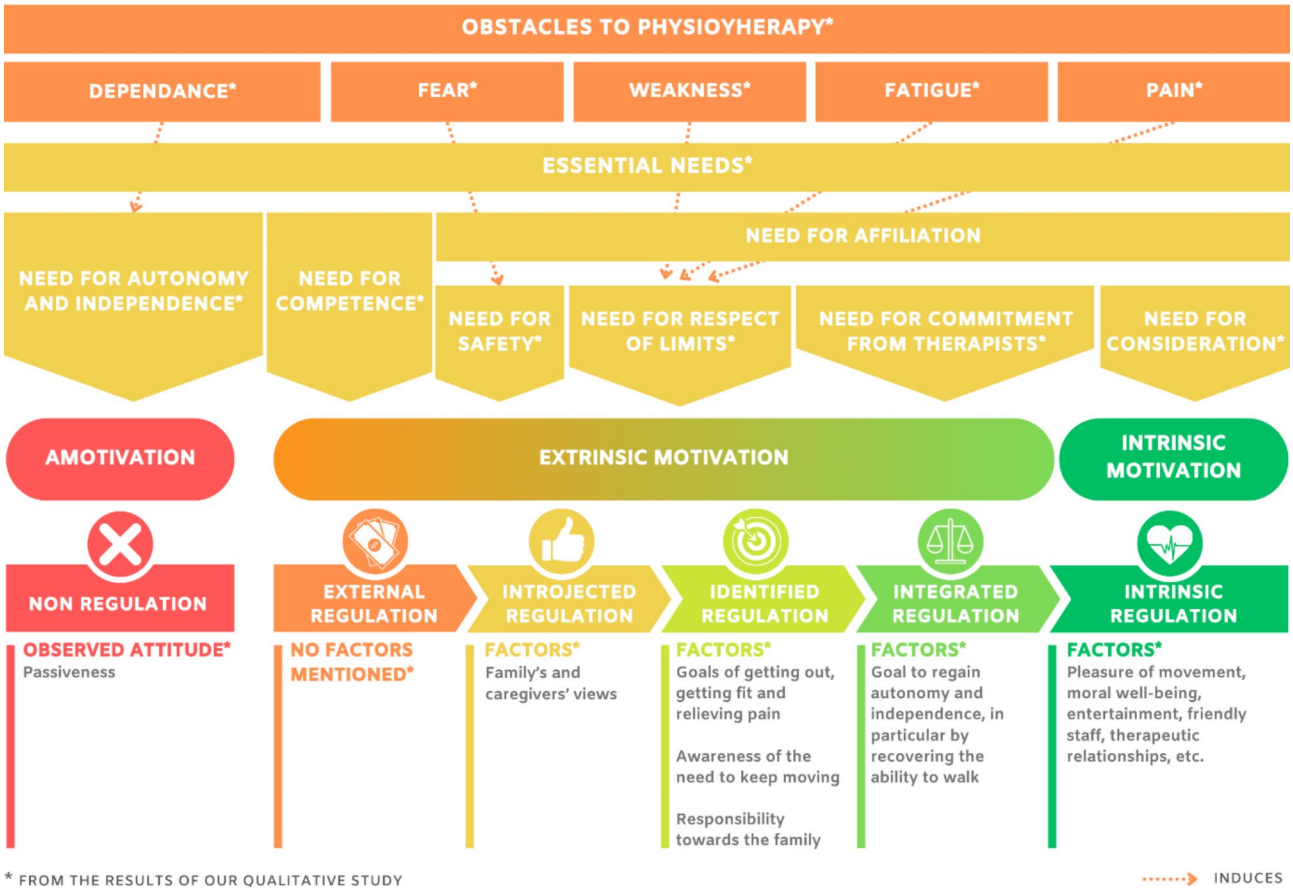


**Fig. 5** Summary of our main qualitative findings (according to the Self-Determination continuum)

*accept. There's a sense of revolt somehow. Do you understand what I mean? Because… because you feel that… that it's not fair.*").

Many participants explicitly expressed their desire to maintain or recover a degree of autonomy in their daily lives, as well as independence in their actions. In many cases, a strong association was made between autonomy, independence and freedom. For four participants, physiotherapy was seen as a way of achieving this autonomy and independence, but this was not unanimous: in contrast, one participant mentioned an unpleasant feeling of dependence experienced during one of the sessions. For him, being confronted with his incapacities was very discouraging. In addition, three participants expressed a strong sense of control on the part of HTMs, who did not always respect their power of decision-making (P6: "*You can't be authoritarian, you have to… You have to say 'Come on, Ma'am, let's try it.' You shouldn't say 'You're going to do this.' (…) I've never given an order and I don't like being given one*").

#### *The need for competence*

More than half the participants mentioned a feeling of competence experienced during and thanks to the physiotherapy sessions, which directly favored the pleasure and satisfaction felt during the sessions, and therefore intrinsic motivation. Feeling able to perform actions again thanks to physiotherapy was of prime importance to these participants, and directly encouraged their involvement in physiotherapy (P1: "*We often feel better than… than when we started. (…) Because we… we've developed certain faculties that… that were a bit dormant, et cetera. And we've… and especially if we see progress*").

In contrast, some participants expressed a feeling of inefficiency. When functional progress was not perceptible, this could reduce participants' motivation to get involved in physiotherapy.

#### *The need for safety*

The need for safety arises from one of the main obstacles to patients' involvement in physiotherapy, namely the fear that could be felt during the various exercises, particularly walking. Although this obstacle was mentioned by almost a third of the participants, it was never an unquestionable reason for refusing physiotherapy. With appropriate guidance from the physiotherapists, almost half the participants expressed a feeling of safety during

the sessions, which directly facilitated their involvement in physiotherapy (I: "*And you're still able to overcome this fear of falling, then? To perform physiotherapy anyway?*"; P6: "*Yes, yes, because I say to myself 'They're here, right? If something goes wrong, they'll pick me up or hold me' (laughter). Some safety, after all…*).

#### *The need for respect of limits*

Besides fear, other factors could reduce participants' motivation to engage in physiotherapy. These included weakness, fatigue and pain. While these symptoms are often considered by HTMs to be obstacles to patient engagement in ADLs and physiotherapy, it is interesting to note that, although they can indeed be barriers, they rarely represented a sufficient reason for participants to refuse physiotherapy. On the contrary, over a third of participants reported that their physiotherapists showed a particular attention to these obstacles, and a certain respect for their limits. This respect of limits is without doubt a major component of the need for affiliation, and the failure to fulfill this need can lead to a breakdown in the bond of trust between patient and caregiver, and consequently to a decrease in commitment (P6: "*There was one today who forced me to go to the bathroom, even though I can't walk that far… (…) And she forced me… 'Well, we'll take the wheelchair', and… she rolled me over there… anyway. And… it didn't do me any good. Oh, no.*").

Moreover, in most cases, the participants' desire to recover their abilities compensated for these obstacles and gave them the motivation they needed to get involved in physiotherapy.

#### *The need for commitment from the therapists*

Numerous extracts described certain human qualities that participants would like to find in their physiotherapist: empathy, a willingness to do the best they can, a personal involvement in the session, etc. Indeed, several participants expressed a desire for their physiotherapist to be truly committed to their treatment (I: "*And what do you think makes a good physiotherapist?*"; P7: "*Well, it's someone who takes care of you, somehow. (…) And not someone who comes to the door and says 'Up, down, forward, goodbye Ma'am, see you tomorrow.'*"). More than a third of participants reported that this need had been met during their care, both during physiotherapy sessions and, more generally, during their hospital stay. Numerous extracts indicate a real sense of affiliation experienced not only with physiotherapists, but also with other HTMs.

While most of the participants were satisfied with the care they received and the human qualities of their HTMs, several interview extracts mentioned a frustration of the need for commitment from the therapists. However, it is important to note that most of these extracts referred to a lack of time and availability on the part of the HTMs, rather than a true lack of human qualities (P2: "*[The HTMs] don't have time. That, that I regret, I regret. You can say it. (…) Yes, the staff, they don't… don't have time. We need more staff who, who takes the time to, to participate with the patient and… and I think they'd have more, more… success.*") This lack of time often resulted in care being perceived as "botched" by participants. That said, some wished to make it clear that this was a flaw of the institution, not of the HTMs themselves. In other words, even if institutional limits could have a negative influence on participants' experiences during their hospital stay, they were more easily accepted when a personal commitment on the part of the HTMs was perceptible.

#### *The need for consideration*

The last need expressed by some participants was to be respected as a person and to be given value by HTMs (P11: "*Because there's… and there's a relationship with the patient and a respect… for the patient. For me, it's something primordial… in all circumstances. (…) even in the vocabulary, you have to be careful. We never talk about diapers, we talk about protections. We don't go to the refectory, we go to the dining room… These are all… all things that respect the patient in front of you. (…) Where freedom is given to people. (…) It's important, otherwise you look like… a little piece of garbage (laughter) that is left aside and no longer has any value. Whereas like this, yes. We still have value…*"). The satisfaction and frustration of this need were not really mentioned by the participants in the context of their hospitalization. They mainly concerned previous experiences, but we still considered it essential to mention this need.

## Discussion

### Comparison with existing literature

In 2020, Charfi et al. used the SDA to assess the prevalence of demotivation in a LTC facility for older people. Based on 30 participants, they obtained a demotivation rate of 43.3%, which is quite close to the rate observed in our quantitative study. Like us, they also found a correlation between demotivation and the level of dependency. It should be noted that in their study, the cut-off score for demotivation was set at 37/40 [17].

In their scoping review, Geelen et al. compiled studies regarding barriers and facilitators to physical activity of HOPs [18]. First, many of the barriers identified in the various studies correspond to some of the demotivating factors we have highlighted. Fear, weakness, fatigue and pain [12, 34–36], as well as lack of time due to organizational restrictions [37–39], are prime examples. The fact that the feeling of being controlled by HTMs [40] and the lack of control over one's situation [41] have a negative influence on the mobility of HOPs also concurs with our

results. Other interesting factors, although not included in our results, are bed comfort and the wearing of hospital gowns, which discourage patients from moving by themselves [12], the fact that physical activity is not perceived as a priority [41, 42] or even as indicated above a certain age or during hospitalization [39, 42, 43], and the lack of information received about physiotherapy [42], encouragement to move [36, 43] or meaningful activities [38].

Secondly, many of the facilitators highlighted in these studies are also included in our results as motivating factors. The main ones are the desire to enhance or maintain one's function or independence [34, 36, 38, 40–42, 44, 45], to avoid the adverse effects of bed rest [34–39, 43, 45], to achieve health and well-being goals that enable a return home [39, 44, 45], and to keep moving [41]. The well-being induced by physical activity [34] and the human qualities of HTMs such as kindness, sense of humor and empathy [35] were also mentioned. The importance for patients of being properly informed [39], of being actors of their own care [40], their sense of self-determination [38], the provision by HTMs of meaningful activities [37] and their respect for their patients' autonomy [35], are fully in line with the results of our study. In addition, other factors identified by these authors are staff encouragements to move [34–36, 39, 40, 42], their adequate assistance [35, 42] and their acknowledgement of the efforts made [38], as well as the incorporation into the organizational routine of physiotherapy sessions [41] and group sessions [42].

Overall, our findings are consistent with those of the various studies compiled by Geelen et al. in their scope review [18]. These studies about barriers and facilitators to physical activity of HOPs have without doubt highlighted many factors influencing the mobility of HOPs, but none of these studies relies on a theory of motivation to classify and analyze these factors. Therefore, our study provides a more comprehensive understanding of the factors influencing HOPs' motivation to engage in ADLs and physiotherapy and helps to understand the interaction between these factors. Moreover, the identification of motivational factors according to SDT provides a more rigorous setting for the implementation of interventions aimed at enhancing HOPs' self-determination.

During the course of our study, van Dijk et al. published a qualitative study investigating the barriers and facilitators to physical activity among HOPs according to the Theoretical Domains Framework (TDF) [46]. Overall, the findings of van Dijk et al. concur with those of our study. They pointed out that bed-centered care has an inactivating effect on patients (who adopt a passive attitude and continually wait for examinations, care and other routine events). They also concluded that patients' lack of awareness of the importance of physical activity and of the ways in which they could stay active were barriers to physical activity during hospitalization, along with the strong sense of control and dependence experienced by patients, and the low availability of HTMs [46].

The analysis of factors influencing HOPs' mobility according to TDF seems to be less precise in detecting relational factors: while fear is also a barrier to physical activity in the study of van Dijk et al., the feeling of safety as a facilitator was not mentioned. The same applies to symptoms related to the acute health situation, which represent a barrier to physical activity: only their medication management or their attenuation constitutes in their study a facilitator. For van Dijk et al. there is no question of the notion of respect of limits. Neither the importance of commitment from HTMs, nor the importance of the consideration accorded to HOPs were mentioned [46]. These differences may, however, be explained by the fact that our study focuses more specifically on participation in physiotherapy than on spontaneous physical activity during hospitalization. It is therefore logical that many factors related to physiotherapists were mentioned.

Overall, while TDF provide a more precise classification than SDT of the various obstacles and facilitators to mobility of HOPs, it seems less focused on interpersonal factors, which are key components of the need for affiliation described by SDT.

#### Strengths and limitations of the study

The main strength of our study is the use of SDT as a guide to classify and understand the motivational factors of HOPs to engage in ADLs and physiotherapy. Moreover, to our knowledge, this is the first study to use a theory of motivation to understand the factors influencing HOPs' involvement in physiotherapy.

However, this study has a number of limitations. Firstly, we only collected data from a single Geriatrics Ward, so generalization of the results must be made with caution. In addition, motivation was not measured in patients hospitalized in other departments. Therefore, we cannot deduce that patients hospitalized in Geriatrics Wards are more demotivated than younger patients. Despite this, our results give a good indication of the prevalence of demotivation among HOPs. Regarding the relationship between demographic factors and motivation, we found that men and people residing in LTC facilities were more prevalent among the group "Demotivated for ADLs" compared to the group "Motivated for ADLs". However, these differences are not statistically significant, which may be attributed to the relatively small sample size. The same applies to the relationship between demographic factors and motivation for physiotherapy.

Moreover, when it comes to quantitative assessment of motivation, the SDA is a simple tool based exclusively on the assessor's perception of the actions performed by

the person being assessed. As such, it does not take into account the intention that arises within the person prior to performing the action and is largely influenced by the patient's functional capabilities. This could explain why participants who were more dependent for transfer and movement showed higher levels of demotivation. That said, while a test taking intention into account could provide a better assessment of motivation, it would also be very time-consuming and not suitable for people with significant cognitive impairment.

Furthermore, for ethical reasons, informed consent had to be requested from each participant, which meant excluding from our study a large number of patients whose cognitive impairment was too severe for the study to be understood (it was not always possible to consult the family). In a field such as geriatrics, where the prevalence of cognitive impairment ranging from mild impairment to dementia is 48% [47], it is essential to find ways of including people with cognitive impairment in research studies.

Lastly, hospitalization is an event that punctuates the lives of patients for a relatively short time. The acute nature of their health situation certainly influences their behavior during their stay, and the various parameters that modulate motivation. Therefore, it would be interesting to conduct the same type of study in the participants' living environment. Implementing strategies to encourage older people's involvement in ADLs seems to make even more sense in this context than during hospitalization. Finally, HTMs often have a broader view of the factors influencing their patients' behavior than the patients themselves. Therefore, it would be interesting for future studies to include the HTMs perspective.

### Perspectives on care

#### *The key to self-determination: restoring worth*

In people experiencing a functional decline associated with a loss of autonomy and independence, the feeling of consideration on the part of HTMs seems to be fundamental in patients' perception of the worth attributed to them as a person. Even in geriatric environments, ageism is present in a systemic way, and is directly influenced by the anxiety about aging found in HTMs [48]. With stigmatization comes dehumanization, which leads the dehumanized patient to lowered self-esteem and therefore reduced involvement [49]. As HTMs, it is essential that our representations of aging change, and that our care is based on equality, respect and dignity. In concrete terms, this implies treating older patients as full-fledged individuals, and focusing on their preserved abilities rather than their deficits, in order to change our own perception of them [50]. This concept is essential in the hospital environment, and absolutely fundamental in institutions providing long-term care for older people. This study shows how desirable it is to develop living models in line with the movement of "Culture Change" [51].

#### *Ensuring the understanding of the aims of physiotherapy: providing information*

The results of our study showed the importance of reestablishing in HOPs the perception of the link between physiotherapy and the recovery of functional abilities. The strategies suggested by van Dijk et al. were the use of communication boards, as well as providing HOPs with information via brochures, television or face-to-face [46]. To promote self-determination and long-term engagement, it is more beneficial to establish goals with intrinsic content rather than goals with extrinsic content [22]. Therefore, HOPs should recognize how physiotherapy can assist them in achieving greater independence in their daily lives, rather than being told, for example, that their physician would be disappointed if they declined physiotherapy. It is also important that these goals come from the person themselves, so that the behavior is perceived as personally important [20]. Providing about a behavior perceived as uninteresting a justification that makes sense to the individual, while satisfying their needs for autonomy, competence and affiliation, enables the integration of this behavior [20]. In this sense, motivational interviewing techniques are particularly useful.

#### *Promoting intrinsic motivation: fulfilling the three basic psychological needs*

The results of our study confirm the importance for HOPs to fulfill their need for autonomy and independence, competence and affiliation. As developed above, therapists' behavior can greatly enhance the feeling of affiliation through a relationship based on respect and consideration. Another strategy may be to include members of the HOP's entourage, family or friends, in their guidance. However, it is important to respect each person's autonomy, so that this support network does not become a care network [22]. Finally, the organization of group physiotherapy sessions during hospital stay could increase HOPs' sense of affiliation, thanks to the support and encouragement they receive from people with whom they identify [52]. It is also essential that the various physiotherapy exercises suggested to HOPs do not set them up for failure. This means proposing appropriate challenges, providing positive feedback and using assessment tools that are not devaluing [20]. As for encouragement, while it may compensate for a lack of intrinsic motivation in some people [46], it would seem that if it is too directive, it can induce a feeling of control. On a broader level, the feeling of competence must be perceived not only during physiotherapy sessions, but across all ADLs. Providing a suitable environment to enable the individual's sense of self-efficacy can promote their engagement in

ADLs and in their care program. Therefore, it is necessary to provide equipment and space that are adapted to the specific needs of HOPs, and to restore the individual's capacity of choice and free will with regard to their movements, meals, clothing, the time chosen for care, etc [22]. Making equipment available in the physiotherapy room and providing walking paths in the hallways could also enhance HOPs' self-determination to move spontaneously [46]. Fostering the fulfillment of the three basic psychological needs through activities that are meaningful to HOPs is truly essential to their self-determination. Taking the time to communicate with them and get to know them enables us as therapists to suggest activities that HOPs can identify with and in which they genuinely wish to engage.

## Conclusion

Among patients hospitalized in Geriatrics Wards and evaluated in this study, the prevalence of demotivation to engage in ADLs ranged from 34% to 60%. While this may seem a wide range, it does show that demotivation is a reality for at least one in three, if not almost two in three participants. In the case of engagement in physiotherapy during the hospital stay, demotivation is less prevalent, affecting between 23% and 48% of participants.

In addition to enabling HOPs to understand the relationship between physiotherapy and the achievement of personal goals (e.g. through motivational interviewing techniques), we need to encourage self-determination in HOPs by adapting our attitude and environment to their needs, rather than the reverse (Fig. 6).

While this may seem self-evident, it is important to bear in mind that both the existing literature and the results of our study show that in the accompaniment of older people, the emphasis is not always placed on relational factors. Although society's views of old age are undeniably evolving, research must continue to explore the psychosocial mechanisms linked to the participation of older people in all the activities offered to them. On a larger level, institutions should promote relationship-based care and provide healthcare teams with the resources (in terms of time and infrastructure) to genuinely commit to their care.

**Abbreviations**

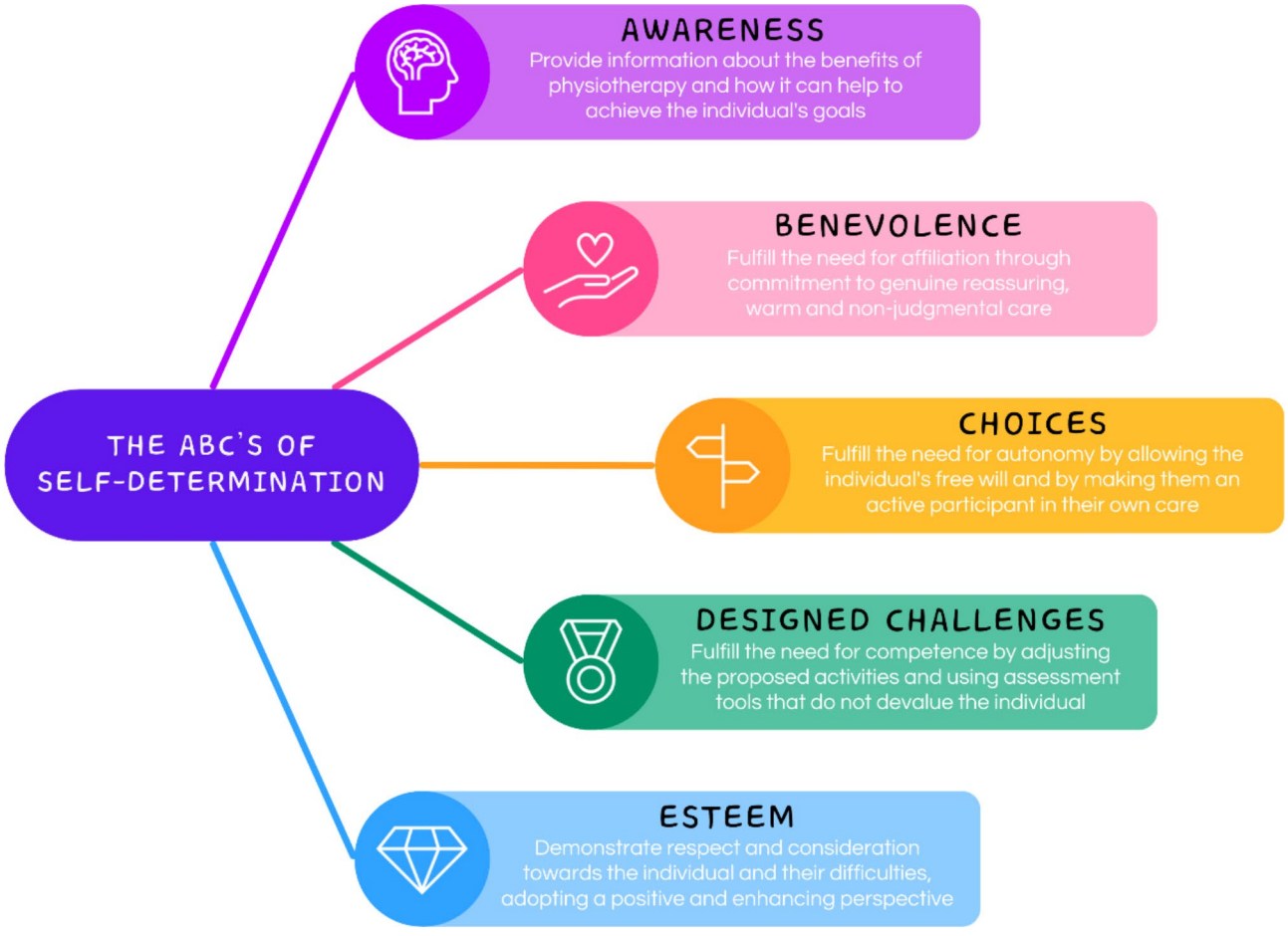


**Fig. 6** "The ABCs of Self-Determination": model for care that promotes self-determination in older people

| | |
|---|---|
| ADLs | Activities of Daily Living |
| CI | Confidence Interval |
| EM | Extrinsic Motivation |
| EMS | Elderly Motivation Scale |
| GDS | Geriatric Depression Scale |
| HOPs | Hospitalized Older Patients |
| HTMs | Healthcare Team Members |
| IM | Intrinsic Motivation |
| LTC | Long-Term Care |
| MMSE | Mini-Mental State Examination |
| OR | Odds Ratio |
| SD | Standard Deviation |
| SDA | Scale of Demotivation Assessment |
| SDT | Self-Determination Theory |
| SEGA | Short Emergency Geriatric Assessment |
| STC | Short-Term Care |
| TA | Technical Assistance |
| TDF | Theoretical Domains Framework |

## Supplementary Information

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Supplementary Material 1

Supplementary Material 2

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**Author contributions**
LV and DS set up this study. LV conducted the literature review, collected and analyzed the data for the qualitative study, and centralized all findings before drafting the manuscript under the supervision of DS. MV, MI, CN, ZC, and ET collected the data for the quantitative study, which were analyzed statistically by DS. All authors approved the final manuscript.

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**Data availability**
The datasets used and analyzed for this study are available from the corresponding author on reasonable request.

## Declarations

**Ethics approval and consent to participate**
This study was approved by the ethics committee of CHU UCL Namur (Godinne), Belgium (national number: B0392022000077), and complies with the Belgian law of May 7, 2004 on human experimentation. Each participant, or their family if requested, was asked to sign an informed consent form.

**Consent for publication**
Not applicable.

**Competing interests**
The authors declare no competing interests.

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## Publisher's note