REPORT

REMOTE AND/OR FACE-TO-FACE PHYSIOTHERAPY IN THE BELGIAN PRIMARY HEALTH CARE CONTEXT: CONSIDERATIONS FROM PATIENTS' AND PHYSIOTHERAPISTS' PERSPECTIVES.

Liesbet De Baets^{1,2*}, Dirk Vissers^{3,4*}, Annick Timmermans², Lotte Janssens², Raf Meesen², Marc Vereecken³, Wim Dankaerts⁵, Céline Labie⁵, Peter Bruynooghe⁶

* Co-first author













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context: considerations from patients' and physiotherapists' perspectives.

Liesbet De Baets^{1,2*}, Dirk Vissers^{3,4*}, Annick Timmermans², Lotte Janssens², Raf Meesen², Marc Vereecken³,

Wim Dankaerts⁵, Céline Labie⁵, Peter Bruynooghe⁶

* Co-first author

¹ Pain in Motion Research Group (PAIN), Department of Physiotherapy, Human Physiology and Anatomy, Faculty of Physical Education

and Physiotherapy, Vrije Universiteit Brussel

² REVAL Rehabilitation Research Center, Faculty of Rehabilitation Sciences, Universiteit Hasselt

³ Movement Antwerp Research Group (MOVANT), Department of Rehabilitation Sciences and Physiotherapy, Faculty of Medicine and

Health Sciences, University of Antwerp

⁴ Center for Health and Technology (CHaT), University of Antwerp

⁵ Musculoskeletal Research Unit, Faculty of Movement and Rehabilitation Sciences, Katholieke Universiteit Leuven

⁶ AXXON, Physical Therapy in Belgium

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Key points

Physiotherapists

- Physiotherapists indicate that for certain aspects of physiotherapy, remote physiotherapy may be an option as it increases the autonomy of the patient; however, most physiotherapists believe that remote physiotherapy should be provided in combination with face-to-face consultations (blended physiotherapy).
- Information on the platforms or tools to be used should be provided along with training;
 existing tools to help decide whether remote physiotherapy is suited for a specific patient should be promoted and further developed.
- Most physiotherapists who are not convinced of the added value of remote physiotherapy have never used remote physiotherapy before. Lowering the barriers for the use of remote physiotherapy should be a priority for education institutions, professional associations and accreditation organizations.

Patients

- o Patients are willing to receive blended physiotherapy.
- Most patients indicate that aspects of patient-centered care remain unchanged or are even improved during digital consultations compared to face-to-face consultations.
- Patients are generally willing to pay for digital consultations, especially when blended physiotherapy is provided.

Summary (English)

It is clear from the literature that blended physiotherapy, i.e., a combination of remote and face-to-face consultations, is an effective and cost-effective form of treatment for a range of conditions. Moreover, as the number of people requiring physiotherapy is increasing and will further increase in the coming years, concurrently with the aging of the population and a growing disability epidemic, this practice may help alleviate the pressure on the healthcare system. However, neither remote nor blended physiotherapy are regularly used in Belgium and there is no permanent legal framework for their reimbursement. This is in contrast with the Netherlands, where coding and billing of remote physiotherapy is possible since August 2020.

Due to the COVID-19 pandemic, a temporary reimbursement for remote physiotherapy sessions has been implemented in Belgium to ensure access to care while limiting the risk of infections. This created an opportunity to assess the experience with, and the general opinion on, new forms of physiotherapy in both patients and physiotherapists, which in turn could help policy makers make informed decisions about the position of remote and blended physiotherapy in the Belgian healthcare system.

In this context, two surveys in Dutch and in French were developed and disseminated: one for Belgian primary care physiotherapists and one for patients. A total of 1567 primary care physiotherapists, of which 643 provided remote physiotherapy during the COVID-19 pandemic, and 183 patients, of which 35 received remote physiotherapy during the COVID-19 pandemic, completed the respective survey.

Overall, more than half of the physiotherapists and patients supported the use of blended physiotherapy. This was more pronounced for physiotherapists who provided remote physiotherapy during the COVID-19 pandemic and for patients who received it as opposed to those who did not. It should be noted that the acceptance of remote physiotherapy as a stand-alone therapy, as implemented during the COVID-19 pandemic, was lower than when it was combined with face-to-face therapy.

Physiotherapists not familiar with remote physiotherapy were less convinced of its usefulness, and a higher percentage reported potential barriers associated with this form of therapy. This clearly indicates the importance of lowering existing barriers and promoting the use of remote physiotherapy to escape the current "unknown makes unloved" impasse. Both physiotherapists who provided remote therapy as well as physiotherapists who did not, reported the inability to give hands-on therapy as the main barrier to using remote physiotherapy as a stand-alone approach.

The results of the patient survey showed the same trends: a higher percentage of patients who did not receive remote physiotherapy indicated potential barriers compared to those who did. The inability to re-

ceive hands-on therapy was also the most frequently reported barrier by both patients who received remote physiotherapy and by those who did not. The majority of patients receiving remote physiotherapy during the COVID-19 pandemic for a complaint for which they already received face-to-face physiotherapy before the COVID-19 pandemic indicated that remote physiotherapy sessions were comparable to or better than face-to-face physiotherapy sessions when assessing important aspects of person-centered care, such as guidance towards self-management, creating a therapeutic bond and attention for the personal environment and situation. Furthermore, most patients indicated willingness to pay for telephone or video consultations, especially the patients already receiving these services.

When questioned about the challenges of implementing blended physiotherapy in daily practice, physiotherapists reported that they expect to encounter problems in determining whether a patient is suited for blended physiotherapy. Furthermore, the majority of therapists estimated that only a minority of their patients is eligible for blended therapy. In addition, although most physiotherapists supported the use of blended physiotherapy, a large percentage believed that it will be difficult or very difficult to integrate blended physiotherapy into their daily practice. Important requirements listed by physiotherapists were the availability of tools or applications that are safe, user-friendly and accessible. This may indicate the need for a portal site where physiotherapists can find easy access to such tools. Finally, according to the vast majority of physiotherapists, the preservation or increase of the rates for remote physiotherapy is also a requirement.

To achieve a wider acceptance of remote and blended physiotherapy and to ensure a smooth implementation of these new forms of physiotherapy in daily practice, it is important to address the concerns and needs of both patients and physiotherapists. One of the main ways to achieve this is by providing a clear and correct legal structure in which the reimbursement of these remote treatments is addressed. Physiotherapists (and physiotherapy students) should also be trained in all legal, technical and clinical aspects related to remote or blended physiotherapy. This is the only way to ensure a sustainable and future-proof use of new technologies in physiotherapy.

Samenvatting (Nederlands)

Uit de literatuur blijkt dat gemengde kinesitherapie, een combinatie van kinesitherapie op afstand en fysieke consultaties, een effectieve en kosteneffectieve manier van behandelen is voor een reeks aandoeningen. Aangezien het aantal mensen dat kinesitherapie nodig heeft stijgt en zal blijven stijgen in de komende jaren, in overeenstemming met de vergrijzing van de bevolking en de toename aan invaliditeit, kan deze manier van behandelen de druk op de gezondheidszorg helpen verlichten. Echter worden noch kinesitherapie op afstand, noch gemengde kinesitherapie regelmatig toegepast in België en is er geen permanent wettelijk kader voor de terugbetaling. Dit in tegenstelling tot Nederland waar codes en facturatie voor consultaties op afstand beschikbaar zijn sinds augustus 2020.

Vanwege de COVID-19-pandemie werd in België een tijdelijke terugbetaling voor kinesitherapie op afstand geïmplementeerd om de toegang tot zorg te verzekeren en tegelijkertijd het risico op infecties te beperken. Dit creëerde een kans om de ervaring met, en de algemene mening over, nieuwe vormen van kinesitherapie bij zowel patiënten als kinesitherapeuten te beoordelen, wat op zijn beurt beleidsmakers zou kunnen helpen om weloverwogen beslissingen te nemen omtrent de positie van kinesitherapie op afstand en gemengde kinesitherapie in de Belgische gezondheidszorg.

In dit kader werden twee enquêtes in het Nederlands en in het Frans ontwikkeld en verspreid: één voor Belgische eerstelijnskinesitherapeuten en één voor patiënten. In totaal vulden 1567 eerstelijnskinesitherapeuten, waarvan 643 kinesitherapie op afstand aanboden tijdens de COVID-19-pandemie, en 183 patiënten, waarvan 35 kinesitherapie op afstand ontvingen tijdens de COVID-19-pandemie, de respectievelijke enquêtes in.

Over het algemeen ondersteunde meer dan de helft van de kinesitherapeuten en patiënten het gebruik van gemengde kinesitherapie. Dit was meer uitgesproken voor kinesitherapeuten die kinesitherapie op afstand aanboden tijdens de COVID-19-pandemie en voor patiënten die deze behandeling ontvingen, in tegenstelling tot degenen die deze behandeling niet aanboden of ontvingen. Belangrijk hierbij is dat de aanvaarding van kinesitherapie op afstand als alleenstaande therapie, zoals geïmplementeerd tijdens de COVID-19-pandemie, lager was dan wanneer ze gecombineerd werd met fysieke consultaties.

Kinesitherapeuten die niet bekend waren met kinesitherapie op afstand waren minder overtuigd van het nut ervan en een hoger percentage meldde mogelijke barrières bij deze vorm van therapie. Dit geeft duidelijk aan dat het belangrijk is om de bestaande barrières te verlagen en het gebruik van kinesitherapie op afstand te promoten om te ontsnappen aan de huidige "onbekend is onbemind" impasse. Zowel kinesitherapeuten die kinesitherapie op afstand aanboden als degenen die dit niet deden, gaven aan dat het niet kunnen geven van

hands-on therapie de belangijkste barrière was voor het gebruik van kinesitherapie op afstand als alleenstaande therapie.

Dezelfde trends werden waargenomen in de resultaten van het patiëntenonderzoek: een hoger percentage patiënten gaf potentiële barrières aan indien ze geen kinesitherapie op afstand kregen in vergelijking met patiënten die dit wel kregen. Het niet kunnen krijgen van hands-on therapie was ook de meest gemelde barrière door zowel patiënten die kinesitherapie op afstand kregen als degenen die dit niet kregen. Het merendeel van de patiënten dat kinesitherapie op afstand kreeg tijdens de COVID-19-pandemie voor een klacht waarvoor ze al fysieke consultaties kregen vóór de COVID-19-pandemie, gaven aan dat kinesitherapie op afstand vergelijkbaar was met of zelfs beter was dan fysieke consultaties wanneer belangrijke aspecten van persoonsgerichte zorg, zoals begeleiding naar zelfmanagement, het creëren van een therapeutische band en aandacht voor de persoonlijke omgeving en situatie, werden beoordeeld. Bovendien gaven de meeste patiënten aan bereid te zijn om te betalen voor telefoon- of videoconsultaties, in het bijzonder de patiënten die deze diensten reeds ontvingen.

Wanneer gevraagd werd naar de uitdagingen van de implementatie van gemengde kinesitherapie in de dagelijkse praktijk, meldden kinesitherapeuten dat ze verwachten problemen te ondervinden bij het bepalen of een patiënt geschikt is voor gemengde kinesitherapie. Bovendien schatte de meerderheid van de kinesitherapeuten dat slechts een minderheid van hun patiënten in aanmerking komt voor gemengde kinesitherapie. Hoewel de meeste kinesitherapeuten het gebruik van gemengde kinesitherapie ondersteunden, geloofde een groot aantal van hen dat het moeilijk of zeer moeilijk zal zijn om gemengde kinesitherapie te integreren in hun dagelijkse praktijk. Belangrijke eisen van kinesitherapeuten waren de beschikbaarheid van hulpmiddelen of applicaties die veilig, gebruiksvriendelijk en toegankelijk zijn. Dit kan wijzen op de noodzaak voor een portaalsite waar kinesitherapeuten dergelijke hulpmiddelen makkelijk kunnen vinden. Tot slot is volgens de overgrote meerderheid van de kinesitherapeuten ook het behoud of de verhoging van de tarieven voor kinesitherapie op afstand een vereiste.

Om een bredere acceptatie van kinesitherapie op afstand en gemengde kinesitherapie te verkrijgen en een soepele implementatie van deze nieuwe vormen van kinesitherapie in de dagelijkse praktijk te garanderen, is het belangrijk om tegemoet te komen aan de zorgen en behoeften van zowel patiënten als kinesitherapeuten. Een van de belangrijkste manieren om dit te bereiken is door een duidelijke en correcte juridische structuur te bieden waarin de terugbetaling van deze behandelingen op afstand wordt aangepakt. Kinesitherapeuten

(en studenten kinesitherapie) zouden ook getraind moeten worden in alle juridische, technische en klinische aspecten met betrekking tot kinesitherapie op afstand of gemengde kinesitherapie. Dit is de enige manier om te zorgen voor een duurzaam en toekomstbestendig gebruik van nieuwe technologieën in de kinesitherapie.

Résumé (Français)

La littérature scientifique montre clairement que la kinésithérapie mixte, c'est-à-dire la combinaison de consultations à distance et en face à face, est une approche efficace qui présente un bon rapport coût-résultats pour le traitement de plusieurs types de pathologies. De plus, étant donné le nombre important de personnes nécessitant de la kinésithérapie, nombre qui augmentera encore dans les années à venir suite au vieillissement de la population et au nombre croissant de personnes vivant en situation de handicap, cette pratique peut contribuer à alléger les pressions mises sur les systèmes de soin de santé. Cependant, ni les séances à distance, ni la kinésithérapie mixte n'est utilisée de manière régulière en Belgique et il n'y a pas, à l'heure actuelle, d'infrastructure légale pour leur remboursement. Ceci contraste avec la situation au Pays-Bas, par exemple, où l'encodage et la facturation de la kinésithérapie à distance est possible depuis août 2020.

En raison de la pandémie de COVID-19, un remboursement temporaire des séances de kinésithérapie à distance fut mis en place en Belgique de façon à assurer l'accès aux soins pour les patients tout en limitant les risques d'infections. Cette conjoncture particulière créa l'opportunité d'évaluer l'expérience des patients et des thérapeutes vis-à-vis de la kinésithérapie mixte et à distance, ce qui pourrait servir de base pour orienter les décisions politiques relatives à la place de ces traitements dans le système sanitaire belge.

Dans ce contexte, deux sondages (déclinés en Néerlandais et en Français) furent développés et diffusés en Belgique: l'un pour les kinésithérapeutes de premiers soins et l'autre pour les patients. Un total de 1567 kinésithérapeutes (dont 643 ont pratiqué la kinésithérapie à distance pendant la pandémie de COVID-19) et 183 patients (dont 35 ont reçu de la kinésithérapie à distance pendant la pandémie de COVID-19) ont complété les sondages correspondants.

Il apparait que, dans l'ensemble, plus de la moitié des kinésithérapeutes et des patients sont en faveur de l'utilisation de la kinésithérapie mixte. Cette tendance est d'autant plus prononcée chez les kinésithérapeutes qui ont pratiqué la kinésithérapie à distance pendant la pandémie de COVID-19 (en comparaison avec les kinésithérapeutes ne l'ayant pas fait), ainsi que chez les patients ayant reçu ces traitements (en comparaison avec les patients ne les ayant pas reçus). Il faut cependant souligner que l'acceptation de la kinésithérapie à distance en tant que traitement unique était moindre que les traitements combinant la kinésithérapie à distance et en face à face.

Les kinésithérapeutes qui n'étaient pas familiers avec la kinésithérapie à distance étaient moins convaincus de son utilité et un pourcentage plus élevé de cet échantillon a signalé l'existence d'obstacles potentiels à cette forme de traitement. Ceci indique clairement qu'il est critique de solutionner ces obstacles et de promouvoir la kinésithérapie à distance afin d'échapper à ce phénomène de peur de l'inconnu. Tant les kinésithérapeutes

ayant utilisés les traitements à distance que ceux n'y étant pas familiers ont signalé l'impossibilité d'utiliser la thérapie manuelle comme étant l'obstacle principal à l'utilisation de la kinésithérapie à distance seule.

Les résultats du sondage sur les patients ont montré des tendances similaires: un pourcentage plus important de patients n'ayant jamais reçu de kinésithérapie à distance a signalé des obstacles potentiels comparé aux patients en ayant précédemment bénéficié. Comme pour les kinésithérapeutes, l'absence de thérapie manuelle a été l'obstacle le plus fréquemment signalé, tant par les patients ayant reçu de la kinésithérapie à distance auparavant que par ceux n'en ayant jamais reçu. La majorité des patients recevant de la kinésithérapie à distance pendant la pandémie de COVID-19 pour une pathologie pour laquelle ils avaient déjà reçu de la kinésithérapie en face à face avant la pandémie de COVID-19 ont rapporté que les séances à distance étaient comparables ou plus bénéfiques que les séances en face à face vis-à-vis d'aspects importants de soins centrés sur le patient, tel que l'accompagnement à l'autogestion, la création d'un lien thérapeute-patient et l'attention à l'environnement et à la situation personnelle. De plus, la majorité des patients ont communiqué leur volonté de payer pour les consultations téléphoniques ou vidéo, en particulier les patients ayant déjà bénéficier de ces services.

Pour les questions relatives aux difficultés d'implémenter la kinésithérapie mixte dans la pratique quotidienne, les kinésithérapeutes ont signalé qu'ils anticipaient des difficultés pour déterminer la compatibilité de la kinésithérapie mixte pour des patients donnés. De plus, la majorité des kinésithérapeutes ont estimé que seul une minorité de leurs patients sont éligibles pour la kinésithérapie mixte. Par ailleurs, bien que la plupart des kinésithérapeutes sont en faveur de l'utilisation de la kinésithérapie mixte, un pourcentage conséquent de ceux-ci est d'avis qu'il sera difficile, voire très difficile de l'intégrer dans la pratique quotidienne. Parmi les besoins cités par les kinésithérapeutes pour la mise en place de la kinésithérapie à distance ou mixte dans la pratique quotidienne, on peut citer la disponibilité d'outils ou d'applications sécurisés et faciles d'usage. Un site internet « portail » permettant l'accès des kinésithérapeutes à des tels outils/applications représenterait une réponse possible à ce besoin. Finalement, d'après la vaste majorité des kinésithérapeutes, le maintien ou l'augmentation des tarifs de kinésithérapie à distance est également une nécessité.

Afin de favoriser une acceptation plus vaste de la kinésithérapie mixte et à distance et d'assurer leur mise en place harmonieuse dans la pratique quotidienne en Belgique, il est important de répondre aux inquiétudes et aux besoins des patients et kinésithérapeutes. Une des clés pour atteindre cet objectif est la mise en place d'une structure légale permettant le remboursement de ces traitements. De plus, il est critique que les kinésithérapeutes (et les étudiants en kinésithérapie) soient formés aux aspects légaux, techniques et cliniques de la kinésithérapie mixte et à distance. Cette approche est la seule façon d'assurer l'utilisation durable de nouvelles technologies en kinésithérapie.

Introduction

Blended physiotherapy is a combination of face-to-face and remote physiotherapy sessions, including the use of online applications and telephone or video consultations. In countries where a legal framework for remote/blended physiotherapy is available (e.g., the Netherlands, Australia), it is most commonly applied for musculoskeletal and cardiorespiratory conditions ^{1,2}. Scientific evidence clearly indicates that remote and blended physiotherapy are beneficial in terms of effectiveness and cost-effectiveness for a wide range of conditions ^{1,3-11}. Important advantages of blended physiotherapy are the increased support towards the performance of home-exercises and as a result, the increased patient involvement in the management of his/her condition (self-management) ¹⁰. However, a good therapeutic alliance and a clear involvement of the physiotherapist in remote physiotherapy sessions are key to successfully coach the patient towards the pre-defined treatment goals ^{2,12}.

Despite its proven benefits, there is no permanent legal framework for the reimbursement of remote physiotherapy in Belgium. This is in contrast with neighboring countries such as the Netherlands, where remote physiotherapy is equated with face-to-face physiotherapy sessions if certain requirements are met ¹³. Moreover, remote physiotherapy is currently not part of the training that physiotherapists receive in Belgium. This is probably the reason why blended physiotherapy is hardly used by Belgian physiotherapists.

It is expected that the current physiotherapy care model in Belgium, consisting of face-to-face physiotherapy sessions prescribed by a medical doctor, will not be able to meet the increasing need for rehabilitation in the upcoming decades. Indeed, due to an aging population and a growing disability epidemic, a future-proof physiotherapy care model seems justified to guarantee the availability of physiotherapy and to alleviate the pressure on our healthcare system. In this context, blended physiotherapy may be an efficient and effective solution for sustained physiotherapy care ^{1,2,10}.

Due to the COVID-19 pandemic and the related lockdown in March 2020, all non-urgent medical services were closed in Belgium. To guarantee a sustained access to physiotherapy care in a safe environment, a temporary legal framework for remote physiotherapy was developed and implemented in the physiotherapy care model. This resulted in a temporary and conditional reimbursement of remote physiotherapy sessions of €25 and €40 per week per patient for telephone and video consultations, respectively. The conditions for reimbursement were at least two contacts a week and the prohibition to provide both remote and face-to-face physiotherapy in the same week ¹⁴.

The introduction of this temporary reimbursement created an opportunity for physiotherapy researchers

and the professional physiotherapy association to assess the feasibility, barriers and advantages of remote and blended physiotherapy, as well as the concrete experiences with this new practice during the lockdown ^{15,16}. Collected data on these aspects, both from a patients' and physiotherapists' perspective, are presented in this report. With the results of this study, we aim to speed up the implementation of remote and blended physiotherapy in Belgium, to guarantee a future-proof physiotherapy care model.

Methodology

Two surveys, one for patients and one for physiotherapists, were designed by the participating research groups in collaboration with experts in the field, clinicians and patients. Both surveys were built in an online survey system (Qualtrics, hosted on university servers) and were available in Dutch and French.

The physiotherapist survey first included a section with general questions, such as demographics and information on practice specifications (conditions treated, years of experience, age group of patients, etc.), followed by a section on the impact of the COVID-19 pandemic on physiotherapy management, with general questions about the use of telephone and video consultations, expected barriers and opportunities, as well as questions about the temporary legal framework for reimbursement. The next section was for physiotherapists providing remote physiotherapy and included questions on the content of their remote physiotherapy sessions. Finally, a section on the general attitude towards blended physiotherapy, not necessarily related to the COVID-19 pandemic, was included.

The patient survey also consisted of a first section questioning demographics and specifics of the condition for which they contacted their physiotherapist. The next section was for patients receiving telephone and video consultations during the COVID-19 pandemic and included questions about their experiences and treatment content. The patient survey also ended with a section on the general attitude towards blended physiotherapy, independent from the COVID-19 pandemic.

From April to June 2020, the surveys were disseminated to a broad audience of both French and Dutch speaking physiotherapists and patients in Belgium through different channels, such as the Belgian Physiotherapy Association (Axxon), patient organizations, social media channels of the involved researchers and their network, etc.. The ethical committees of the University of Antwerp/UZA and the University of Hasselt approved the study. Data were analyzed using descriptive statistics.

Results

1. Who are the respondents to the survey?

A total of 183 patients completed the survey, of which 35 received remote physiotherapy (telephone or video consultations) during the COVID-19 pandemic. Their demographic information as well as additional information regarding their complaint and the physiotherapy management received are presented in **Table 1**.

Table 1. Demographic information of patients and specifications regarding complaint and physiotherapy

	All patients (n=183)	Patients receiving remote physiotherapy during the COVID-19 pandemic (n=35)
	DEMOGRAPHIC INFORMAT	TION
Age - mean (SD)	48 (17)	
Gender (% women)	64%	
Employment:		
Student	7%	
Unemployed	2%	
Partially technically unemployed	5%	
Completely technically unemployed	5%	
Employed, working from home	27%	
Employed, social distancing at work	18%	
Retired	18%	
On sick leave	9%	
Disabled	9%	
Specifications	S REGARDING COMPLAINT A	AND PHYSIOTHERAPY
Where are you being treated by an independent p	hysiotherapist in Belgium	n before and/or during the COVID-19 pandemic?
In a hospital or healthcare facility	23%	
At home	4%	
In an independent physiotherapy practice	79%	
For which complaint are you being treated by the	physiotherapist?	
Musculoskeletal rehabilitation	66%	69%
Neurological rehabilitation	18%	14%
Cardiorespiratory rehabilitation	8%	14%
Rehabilitation for psychological (di)stress	4%	14%
Psychiatric rehabilitation	1%	2%
Perineal rehabilitation	5%	2%
Oncological rehabilitation	12%	2%
Duration of complaint that you are currently being	treated for by the physic	otherapist?
<1 month	3%	9%
1–3 months	16%	31%
3–6 months	10%	11%
>6 months	71%	49%

n, number of respondents; SD, standard deviation

A total of 1567 primary care physiotherapists completed the survey, of which 643 provided remote physiotherapy (telephone or video consultations) during the COVID-19 pandemic. Demographic information and additional information regarding the physiotherapy setting and patient population are presented in **Table 2**.

Table 2. Demographic information of physiotherapists and specifications regarding setting and patient population

	All physiotherapists (n=1567)	Physiotherapists providing remote physiotherapy during the COVID-19 pandemic (n=643)
DEMOGRAPHIC INF	ORMATION	
Age – mean (SD)	43 (13)	40 (12)
Gender (% women)	60%	62%
Number of years of independent physiotherapy – mean (SD)	19 (12)	16 (12)
Specifications regarding setting	G AND PATIENT POPULATION	
Physiotherapy setting		
Practice without colleagues	40%	
Small practice (1–5 colleagues)	47%	
Medium-sized practice (5–10 colleagues)	11%	
Large practice (more than 10 colleagues)	3%	
In a hospital or institution	10%	
Main age group of patient population		
<18 years old	9%	13%
>65 years old	13%	8%
18–65 years old	78%	79%
Main treatment interventions		
Musculoskeletal rehabilitation	84%	80%
Neurological rehabilitation	47%	43%
Perineal rehabilitation	16%	19%
Cardiorespiratory rehabilitation	32%	36%
Rehabilitation for psychological (di)stress	31%	31%
Psychomotor rehabilitation	15%	20%
Oncological rehabilitation	20%	16%
I treat all the above problems to the same extent	3%	2%

n, number of respondents; SD, standard deviation

2. Are physiotherapists willing and able to use technology required for remote or blended physiotherapy?

2.1. Remote physiotherapy

Before the COVID-19 pandemic, 16% of all physiotherapists who filled in the survey had used telephone or video consultations (remote physiotherapy), the majority of whom (14%) did so rarely. Of all the physiotherapists who filled in the survey, 41% (n=643) performed remote physiotherapy during the COVID-19 pandemic. Of these 643 physiotherapists, 76% felt that their remote consultations were less effective in achieving therapy goals compared to face-to-face consultations.

The majority of physiotherapists believed that the minimum frequency for remote physiotherapy should be omitted or reduced to less than twice a week (43% and 30%, respectively); this was also the case for physiotherapists performing remote physiotherapy during the COVID-19 pandemic (34% and 41%, respectively) (**Table 3**). Regarding the rates, the majority of physiotherapists reported that the current reimbursement rates can only be implemented if the patient is also treated in real life (62.4%) and that the rates should be preserved after the COVID-19 pandemic (58% of all physiotherapists and 63% of physiotherapists performing remote sessions) (**Table 3**).

Table 3. Frequency and rates of remote physiotherapy after the COVID-19 pandemic according to physiotherapists

	All physiotherapists (n=1567)	Physiotherapists providing remote physiotherapy during the COVID-19 pandemic (n=643)
If the nomenclature for remote physiotherapy is maintained after the 0	COVID-19 pandemic	
The minimum frequency should be:		
2x/week	24%	23%
>2x/week	3%	2%
<2x/week	30%	41%
Should be abolished	43%	34%
The rates for remote consultations during the COVID-19 pandemic		
Should be preserved	58%	63%
Should be increased	27%	32%
Should be lowered	15%	5%
Rates for remote physiotherapy		
Are always possible, even if you only treat the patient remotely	22%	34%
Are only possible if you also treat the patient (in real life) in your practice	62.4%	61%
Are never possible	15.3%*	5%*

n, number of respondents

^{*}Results for Dutch speaking physiotherapists only.

Physiotherapists who provided remote physiotherapy during the COVID-19 pandemic indicated that the number and duration of consultations decreased (70% and 46%, respectively) compared to when they were performing face-to-face consultations, while only 20% and 29% indicated that these remained the same.

When inquired about the perceived usefulness of remote physiotherapy, the majority of physiotherapists estimated that telephone or video consultations could be used for certain aspects of physiotherapy; only 9% of physiotherapists performing remote consultations indicated that it would not be useful for any application, in contrast to 41% of physiotherapists not providing these services (**Figure 1A**). Overall, the answers provided by both physiotherapists performing remote physiotherapy and the ones who did not were comparable, but the percentages were higher for the former category (**Figure 1B-E**).

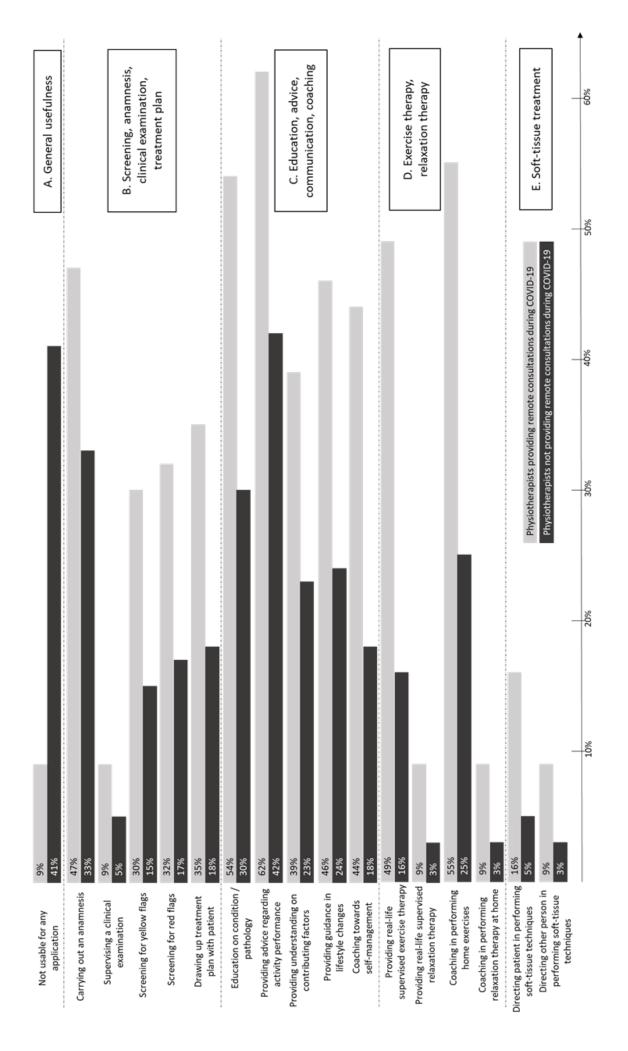


Figure 1. Applications for which telephone and video consultations can be useful according to physiotherapists.

The most important barriers to perform telephone or video consultations during the COVID-19 pandemic were partially different for physiotherapists who provided these services and for those who did not. For physiotherapists providing remote physiotherapy (n=643), the most important barriers were the impossibility to give hands-on therapy (52%) and the impossibility to efficiently perform the therapy (40%) (Figure 2). Physiotherapists not providing remote physiotherapy (n=924) indicated that the most important barriers were the impossibility to give hands-on therapy (67%) and the lack of conviction that telephone or video consultations are effective (66%) (Figure 2). The latter is in contrast with the results of physiotherapists already providing these services, of whom only 16% perceived this as a barrier (Figure 2). Overall, the percentage of physiotherapists reporting a potential barrier was higher for those not providing remote physiotherapy, except for the current rules for reimbursement. Only 7% of physiotherapists not providing remote physiotherapy indicated that nothing was stopping them to provide these services, while this was true for 31% of physiotherapists already providing remote physiotherapy.

During the COVID-19 pandemic, the tools used to perform telephone or video consultations included WhatsApp (42%), Skype (for business) (23%) and specific software for remote rehabilitation (20%) (**Figure 3**).

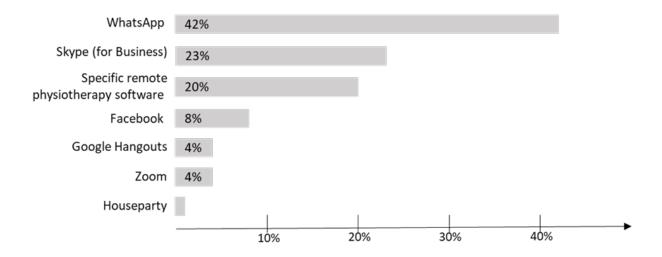


Figure 3. Tools used to perform telephone or video consultations during the COVID-19 pandemic.

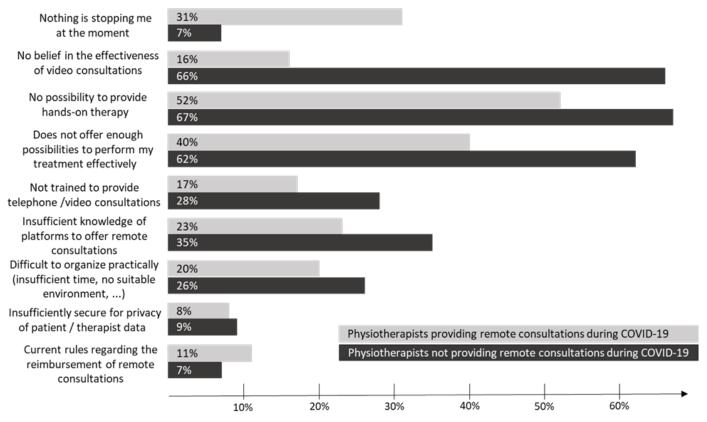


Figure 2. Barriers associated with the use of telephone or video consultations according to physiotherapists, as experienced during the COVID-19 pandemic.

2.2. Blended physiotherapy

Although the majority of physiotherapists did not use blended physiotherapy before the start of the COVID-19 pandemic (81%), if blended physiotherapy was performed, the tools used were phone calls (26%), e-mail (15%), text messaging (15%) and specific tele-coaching software or applications (3%). The physiotherapists that had practiced blended physiotherapy before the COVID-19 pandemic mostly combined face-to-face physiotherapy with websites featuring exercises or videos to support home-exercises, trackers to monitor patient movement and fitness equipment linked to a computer (**Table 4**). While previous use of websites featuring exercises or videos to support home-exercises has been reported by 50% of physiotherapists, other specific forms of remote physiotherapy have not been used before by more than 83% of participants (**Table 4**).

Table 4. Different forms of blended physiotherapy performed before the COVID-19 pandemic

What forms of blended physiotherapy have you already used BEFORE the COVID-19 pandemic for the treatment of your patients? (percentage of all physiotherapists, n=1481)

	Has never happened before	Occurs once a year	Occurs once a month	Occurs once a week	Occurs daily
Activity sensors/trackers to monitor patient movement	83	11	4	2	0
Websites with exercises or videos to support practicing at home (e.g., home exercises or Physitrack)	50	19	14	9	8
Game consoles (e.g., Nintendo or Wii)	86	9	3	2	0
Fitness or exercise equipment connected to a computer (e.g., functional squat or bicycle ergometry)	83	6	4	4	3
Virtual reality applications	97	2	1	0	0
Augmented reality applications (e.g., projecting obstacles onto a treadmill)	98	1	1	0	0

n, number of respondents

The most important drawbacks of blended physiotherapy, according to physiotherapists, were the time it takes for the physiotherapist to prepare the session (44%) and other drawbacks (25%; not specified). The second most important drawbacks were failure of the technology (23%) and, again, the time it takes for the physiotherapist to prepare the session (22%). The third most important drawbacks were other drawbacks (21%; not specified) and, again, failure of the technology (19%). All drawbacks are listed in **Table 5**.

Table 5. Drawbacks of blended physiotherapy according to physiotherapists

Drawbacks to blended physiotherapy, i.e., adding remote care? (percentage of all physiotherapists, n=1481)			
	Main drawback	2 nd most important drawback	3 rd most important drawback
It takes a lot of time from the physiotherapist to set everything up and prepare it for the patient	44	22	10
Technology fails too often	12	23	19
Fewer consultations are required	2	4	5
You have to keep training to keep up with the latest apps and technologies	9	16	17
The cost for the patient	4	6	11
The cost for the physiotherapist	5	14	17
Others	25	16	21

n, number of respondents

Additionally, 52% of physiotherapists indicated that they expect to encounter issues while determining whether a patient is suited for blended physiotherapy or not, while only 23% did not expect any issues. Most respondents estimated that less than 25% of their patients qualifies for blended physiotherapy (77%) while only 2% estimated that more than 75% of their patients are eligible. Overall, more than half of the physiotherapists (59%) estimated that it will be difficult or very difficult to integrate blended physiotherapy into their daily practice, while only 18% thought this will be easy or very easy.

The respondents indicated that the most important benefits of blended physiotherapy were the increased autonomy of the patient (32%) and the possibility to follow treatment at home (15%). The second most important benefit was the implementation of therapy in the home setting (17%) and, again, the increased autonomy of the patient (16%). The third most important benefit was again the increased autonomy of the patient (12%), as well as other benefits (12%; not specified). Overall, the benefits of blended physiotherapy according to physiotherapists were mostly associated with an increased autonomy of the patient, with the possibility to implement the therapy in the home setting and the possibility to follow treatment at home. All benefits are listed in **Table 6**.

Table 6. Benefits of blended physiotherapy according to physiotherapists (n, number of respondents)

Benefits of blended physiotherapy, i.e. adding remote care? (percentage of all physiotherapists, n=1481)			
	Most important benefit	2 nd most important benefit	3 rd most important benefit
Greater patient compliance	9	10	9
Better effect of the treatment	3	5	6
Fewer consultations are required	3	6	5
Greater patient satisfaction	3	3	5
More data available to assess whether the treatment is working	2	3	4
No relocation necessary	15	9	11
Be able to follow up more frequently	6	8	9
Better view of the home situation	6	7	9
Flexible planning of consultations	3	5	7
Implementation of therapy in the home situation	9	17	11
Giving the patient more autonomy and independence in his treatment (encouraging self-management)	32	16	12
Others	10	10	12

The most important prerequisites to implement blended physiotherapy in daily practice were the user-friend-liness and accessibility of the tools (33%) and the reimbursement of the new practice (23%). The second most important prerequisites were, again, the user-friendliness and accessibility of the tools (27%) and the lack of administrative surplus (23%). The third most important prerequisites were the reimbursement of the new practice (21%) and the lack of administrative surplus (20%). All prerequisites are presented in **Figure 4**.

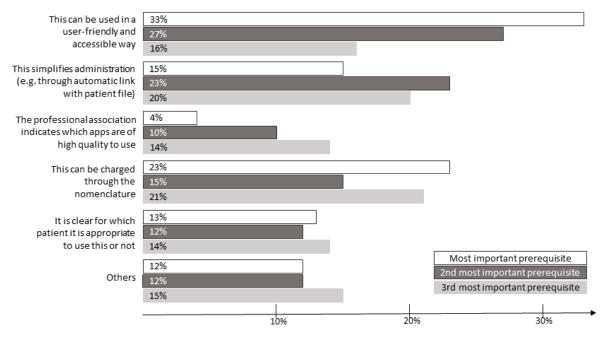


Figure 4. Prerequisites of blended physiotherapy according to physiotherapists.

3. What do patients think?

3.1. All patients

According to 21% of all patients, remote physiotherapy is possible, even without face-to-face therapy sessions. However, most patients (57%) believe that remote physiotherapy is only an option in combination with face-to-face sessions, and 21% believe it is never an option; this percentage decreases to 9% in patients who received remote physiotherapy during the COVID-19 pandemic (n=35). The results are presented in **Table** 7. Most patients (62%) were also willing to pay for telephone or video consultations and this percentage increased to 83% when only considering patients who received these services.

Table 7. Applicability of remote physiotherapy according to patients

	All patients (n=183)	Patients receiving remote physiotherapy during the COVID-19 pandemic (n=35)	Patients not receiving remote physiotherapy during the COVID-19 pandemic (n=148)
Are physiotherapy telephone and video consultation	ons an option?		
Remote physiotherapy is never possible	21%	9%	24%
Remote physiotherapy is always possible, even without treatments with physical contact	21%	20%	22%
Only as a combination of physical and remote sessions	57%	71%	54%

n, number of respondents

Patients receiving remote physiotherapy were more receptive to other forms of remote therapy besides telephone or video consultations (69%), such as internet platforms, smartphone applications or text messages, as compared to patients not receiving these services (40.5%). They were also more inclined to share data collected during remote physiotherapy sessions through a digital way, while patients not receiving these services were more inclined to share the data during a physical consultation. These results are presented in **Table 8**. *Table 8*. *Willingness to share data collected during remote physiotherapy*

	All patients	Patients receiving re-	Patients not receiv-
	(n=183)	mote physiotherapy during the COVID-19 pandemic	ing remote physio- therapy during the COVID-19 pandemic
		(n=35)	(n=148)
As a patient, are you willing to share data with your data collected through pedometer, activity tracker,		at you have obtained throug	gh certain devices (e.g.
Yes, I want to share these data during a physical consultation	35%	14%	39%
Yes, I want to share these data in a digital way when I give permission	34%	46%	32%
Yes, I want to share these data automatically in a digital way	21%	29%	19%
No	10%	11%	10%

n, number of respondents

The main barrier associated with the use of telephone or video consultations was the lack of hands-on therapy (46%). A full list of barriers and respective percentages is presented in **Table 9**.

Table 9. Barriers associated with the use of remote physiotherapy according to patients

	All patients (n=183)	Patients receiving remote physiotherapy during the COVID-19 pandemic (n=35)	Patients not receiving remote physiotherapy during the COVID-19 pandemic (n=148)
Main barriers to telephone or video consultations			
Nothing is stopping me right now	35%	51%	31%
Lack of the ability to receive hands-on therapy	46%	46%	46%
My physiotherapist does not suggest this option	23%	0%	29%
No belief in the effectiveness of video consultations	16%	6%	19%
Insufficient facilities (computer, internet, closed room)	9%	0%	11%
Insufficient knowledge of the platforms	9%	0%	11%
Main barriers for other forms of remote physiothe text messages	rapy, e.g. via an inter	net platform, via a smartph	one application, via
Nothing is stopping me right now	40%	66%	34%
Insufficient knowledge of these platforms	22%	17%	23%
No need to do this	32%	17%	36%

n, number of respondents

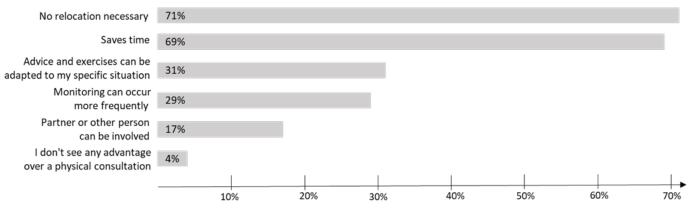


Figure 5. Main benefits of remote physiotherapy reported by patients receiving these services.

3.2. Patients receiving remote physiotherapy

According to patients receiving remote physiotherapy (n=35), the most important benefits were the fact that they did not need to relocate (71%) and time savings (69%), while only 11% indicated that they did not see any advantages compared to a face-to-face session. The benefits according to patients receiving remote physiotherapy are presented in **Figure 5**.

More than half of patients (64%) who received remote physiotherapy during the COVID-19 pandemic and face-to-face consultations before the COVID-19 pandemic (n=28) indicated that it was possible to achieve the expected goals with telephone or video consultations and 4% of patients indicated that goals were more likely to be achieved with remote physiotherapy. Moreover, most patients indicated that they were as motivated (64%) or even more motivated (18%) to receive physiotherapy through telephone or video consultations. This was also true for their willingness to honor agreements as 72%–86% of patients reported that they were as inclined to stick to the agreements as when they received face-to-face treatment, with only 7%–14% reporting to be less inclined to do so. These results are presented in **Table 10**.

Table 10. Willingness of patients to honor agreements

	Less during digital consul- tations	More during digital consultations	Just as much as during digital consultations
Honour existing commitments	14%	14%	72%
Follow advice	7%	7%	86%
Perform exercises as agreed	14%	11%	75%

The patients reported that the guidance towards self-management during remote physiotherapy sessions was the same (71%) or even improved (22%) as compared to face-to-face sessions. Most patients also indicated that their relationship with the physiotherapist was unchanged (46%–93%) or improved (7%–21%) compared to face-to-face consultations. The latter results are reported in **Table 11**.

Table 11. Aspects of therapeutic alliance as perceived by the patients receiving remote physiotherapy

	Less during digital con- sultations	More during digital consultations	Just as much as during digital consultations
Time for explanation and consultation	11%	14%	75%
One-on-one contact	32%	21%	46%
Feeling of support and confidence	7%	21%	72%
Follow-up of therapy	0%	7%	93%
Truthful picture of complaint	18%	7%	75%

Regarding the involvement of their environment, 46% and 32% of patients reported that their physiotherapist paid as much or even more attention to their personal environment and situation, and 71% and 22% indicated that their partner or person in their environment was as involved or more involved during remote physiotherapy.

Discussion

Convincing physiotherapists about the added value of remote or blended physiotherapy remains a challenge, as the results of the physiotherapy survey show that physiotherapists have concerns about these services. However, the COVID-19 pandemic may help accelerate the acceptance and implementation of remote or blended physiotherapy by primary care physiotherapists. Regarding remote physiotherapy, their major concerns are the impossibility to give hands-on therapy and the belief that such a practice has limited effectiveness. This was supported by the fact that most respondents indicated that these remote consultations were less effective for achieving therapy goals. Patients also indicated that the lack of hands-on therapy was the most important barrier when considering remote physiotherapy. These concerns should be addressed to aid the implementation of remote physiotherapy in Belgium as clinician acceptance of remote physiotherapy is key for the success of this practice 11. This could be achieved by educating physiotherapists on which aspects of physiotherapy can be handled with remote physiotherapy sessions and how these sessions should be conducted, thereby increasing the willingness to use this new practice for certain aspects of physiotherapy. The majority of physiotherapists and patients also indicate that they prefer the combined application of remote sessions with face-to-face sessions, i.e., blended physiotherapy, over remote physiotherapy sessions and only a minority believes that remote physiotherapy alone can be a treatment option, which suggests that telephone or video consultations alone will not be enough.

For blended physiotherapy, the concerns were mostly related to the time it takes the physiotherapist to prepare a session and to the possible failure of the technology. Moreover, most physiotherapists estimated that less than 25% of their patients would benefit from blended physiotherapy and more than half estimated that it will be difficult to implement this new practice in their daily routine. To improve the willingness of physiotherapists to implement blended physiotherapy in their daily practice even beyond the COVID-19 pandemic, this practice should become more accessible and an adaptation to the new way of working will be needed. Moreover, the time needed to prepare remote sessions should be considered when drafting new regulations. It is also important to use an application or platform that meets the needs of both physiotherapists and patients and allows reaching the expected outcomes while ensuring adherence to the privacy regulations ¹¹. As the user-friendliness and accessibility of the tools were prerequisites stipulated by physiotherapists, the platforms and applications that can be used should be screened and receive a quality label that also reflects their safety and physiotherapists should be trained to use these tools.

Further surveys and clinical trials should be conducted to assess the effectiveness of remote or blended physiotherapy compared to face-to-face physiotherapy and to determine the indications and patients for whom

remote or blended physiotherapy can be of added value. Indeed, most physiotherapists expect to encounter issues determining whether a patient is suited for this kind of therapy. Therefore, there is a need for additional training, as well as for promoting and further developing existing tools, guidelines or questionnaires to help decide whether remote physiotherapy is suited for a specific patient.

While more data are needed regarding the indications and receptive patients, and remote physiotherapy cannot fully replace face-to-face consultations, physiotherapists indicate that for certain aspects of physiotherapy, such as providing advice on activities to perform or avoid and education of the patient regarding his/her condition, remote physiotherapy may be an option. They also indicate that the most important benefit associated with remote or blended physiotherapy is the increased autonomy of the patient. This self-management is particularly important for patients with a chronic disease or complaint ².

The results also show that a distinction can be made between physiotherapists who provided remote physiotherapy sessions and those that did not. Physiotherapists already providing these services have less reservations towards either remote or blended physiotherapy and a higher percentage believes that it can be useful for certain aspects of physiotherapy. Additionally, of the physiotherapists already performing video consultations, only 16% indicated that they were not convinced of their effectiveness, while for physiotherapists not performing video consultations this was 66%. This underlines the need to develop guidelines and tools to make these services more accessible, as physiotherapists are more inclined to provide these services if they are familiar with them. The results of the patient surveys indicate a similar trend as patients who received remote or blended physiotherapy see fewer barriers than patients who did not. Most of the patients who received remote or blended physiotherapy also indicated that aspects of patient-centered care were unchanged or even improved during digital consultations, suggesting that patients are receptive to this form of physiotherapy.

During the COVID-19 pandemic, remote physiotherapy represented a possibility to follow treatment from home, thereby avoiding deferred care ¹⁷. This led to an increase in the use of these services and the increasing number of physiotherapists who became familiar with them can ensure that these services remain in use even after the pandemic. To achieve this, reimbursement of the remote physiotherapy consultations should be permanent and easy to implement, as this is an important incentive for physiotherapists to provide these services.

Results from the literature indicate that remote and blended physiotherapy are both effective and cost-effective ^{1,7-10}. The implementation of blended physiotherapy could potentially reduce the cost of care through the subsequent improvement of patient self-management ^{1,10}. As the need for physiotherapy is expected to increase, this practice may also help reduce the burden on the healthcare system. Moreover, patients

are willing to pay for these services, thereby facilitating their implementation. However, most physiotherapists believe that a fixed frequency and duration of the remote sessions should be omitted, and regulations
therefore would need to be adapted to reflect the needs of both patients and physiotherapists. Indeed, as in
Belgium remote physiotherapy had to be implemented rapidly due to the COVID-19 pandemic, the different
protocols and reimbursement plans will have to be assessed to ensure a sustainable use of this new practice
in the future.

Conclusions

For certain aspects of physiotherapy, remote physiotherapy may be appropriate, but it cannot fully replace face-to-face consultations. A mix of remote sessions and face-to-face sessions (blended physiotherapy) should therefore be encouraged, without reducing the standard of care. Additional research is needed to assess the effectiveness and cost-effectiveness of blended physiotherapy in the Belgian setting and to assess for which specific indications, patients and aspects of physiotherapy this novel form of physiotherapy would be useful.

Physiotherapists should be informed about the benefits of blended physiotherapy, and trained to provide such services, to increase the acceptance of these methods and ensure their implementation in daily practice. Identification and certification of reliable platforms and tools, along with training of the physiotherapists to use them will further facilitate the implementation. Finally, a solid legal and financial framework is needed for Belgian physiotherapists and their patients to catch up with other European countries, where the use of innovative technology is already embedded in primary care physiotherapy.

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