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Impact of Self- and Peer Assessment on the Clinical Performance of Physiotherapists in Primary Care: A Cohort Study

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ABSTRACT

Purpose: This study evaluated the impact of a quality improvement programme based on self- and peer assessment to justify nationwide implementation. **Method:** Four professional networks of physiotherapists in The Netherlands ($n = 379$) participated in the programme, which consisted of two cycles of online self-assessment and peer assessment using video recordings of client communication and clinical records. Assessment was based on performance indicators that could be scored on a 5-point Likert scale, and online assessment was followed by face-to-face feedback discussions. After cycle 1, participants developed personal learning goals. These goals were analyzed thematically, and goal attainment was measured using a questionnaire. Improvement in performance was tested with multilevel regression analyses, comparing the self-assessment and peer-assessment scores in cycles 1 and 2. **Results:** In total, 364 (96%) of the participants were active in online self-assessment and peer assessment. However, online activities varied between cycle 1 and cycle 2 and between client communication and recordkeeping. Personal goals addressed client-centred communication (54%), recordkeeping (24%), performance and outcome measurement (15%), and other (7%). Goals were completely attained (29%), partly attained (64%), or not attained at all (7%). Self-assessment and peer-assessment scores improved significantly for both client communication (self-assessment = 11%; peer assessment = 8%) and recordkeeping (self-assessment = 7%; peer assessment = 4%). **Conclusions:** Self-assessment and peer assessment are effective in enhancing commitment to change and improving clinical performance. Nationwide implementation of the programme is justified. Future studies should address the impact on client outcomes.

Key Words: peer review; performance appraisal; quality improvement; self-assessment; primary care; cohort studies.

RÉSUMÉ

Objectif : évaluer les répercussions d'un programme d'amélioration de la qualité reposant sur l'autoévaluation et l'évaluation par les pairs pour en justifier la mise en œuvre nationale. **Méthodologie :** quatre réseaux professionnels de physiothérapeutes des Pays-Bas ($n = 379$) ont participé au programme, composé de deux cycles d'autoévaluation en ligne et d'évaluation par les pairs à l'aide d'enregistrements vidéo des communications des clients et des dossiers cliniques. L'évaluation était fondée sur des indicateurs de la performance qui pouvaient être cotés sur une échelle de Likert de cinq points, et l'évaluation en ligne était suivie de rencontres de rétroaction. Après le cycle 1, les participants se sont donné des objectifs d'apprentissage personnel. Les chercheurs ont évalué ces objectifs par thème et en ont mesuré l'atteinte au moyen d'un questionnaire. Ils ont vérifié l'amélioration de la performance à l'aide d'analyses de régression multiniveaux et ont comparé les cotes d'autoévaluation et d'évaluation par les pairs des cycles 1 et 2. **Résultats :** au total, 364 des participants (96 %) étaient actifs dans l'autoévaluation en ligne et l'évaluation par les pairs. Cependant, les activités en ligne variaient entre le cycle 1 et le cycle 2 et entre les communications avec le client et la tenue de dossier. Les objectifs personnels portaient sur les communications axées sur le client (54 %), la tenue de dossiers (24 %), les mesures de la performance et des résultats cliniques (15 %) et d'autres points (7 %). Les objectifs étaient complètement atteints (29 %), partiellement atteints (64 %) ou pas du tout atteints (7 %). Les cotes d'autoévaluation et d'évaluation par les pairs s'amélioraient sensiblement dans les secteurs des communications avec le client (autoévaluation = 11 %; évaluation par les pairs = 8 %) et de la tenue de dossiers (autoévaluation = 7 %; évaluation par les pairs = 4 %). **Conclusions :** l'autoévaluation et l'évaluation par les pairs sont efficaces pour accroître la volonté de changer et améliorer la performance clinique. La mise en œuvre nationale du programme est justifiée. De futures études devraient aborder les répercussions de ce programme sur les résultats cliniques des clients.

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People seeking the help of a physiotherapist deserve the best possible care, provided by up-to-date, educated professionals. In The Netherlands, the quality of physiotherapy services is determined by the quality dimensions established by the Institute of Medicine (IOM):¹ effectiveness, patient-centredness, transparency, and safety. Several Dutch authorities determine whether the best possible care is delivered, representing different interests and focusing on different quality domains. For example, the Dutch government regulates quality by maintaining a national register-based proof of certification,² the professional society of physiotherapists conducts a register based on proof of professional development and specialization, and health insurers regulate quality by sampling and benchmarking process and outcome data of physiotherapy services. They also conduct client satisfaction surveys and clinical audits.

The literature has shown that external regulation is potentially effective, but the results are short term, and the strategy might have unwanted consequences, such as under-treatment of clients with multiple morbidity or disparities in health care delivery.^{1,3} Professionals often resist regulation imposed by health insurers because such regulation might challenge their professional identity and autonomy, as explained by self-determination theory.⁴ Scholte and colleagues⁵ studied the impact of a Dutch performance feedback system for physiotherapists, based on indicator scores extracted directly from electronic health records, and they showed that financial incentives by health insurers negatively affected the use of feedback reports for quality improvement (QI). A lack of belief in the QI system and physiotherapists' distrust of health insurers were the major barriers to using such feedback.⁵

If physiotherapists themselves take responsibility for the quality of their services, they can design QI interventions and outcome measures that are in line with their professional norms and values, encompass the complexity of their professional roles, and adequately reflect their day-to-day practice. It gives them the opportunity to look forward, to anticipate change, rather than to look backward.⁶ Looking forward might address the changing roles of physiotherapists in providing client-centred care, which requires sophisticated client communication skills and advanced collaboration in health care teams. It also implies adequate process and outcome measurement, including recordkeeping, to meet the increasing demand for transparency, accountability, and access to information.⁷

Research has shown that self-regulation might be more effective in the long term than external regulation^{8,9} because mutually shared social and professional standards of performance are critical to changing professional behaviour.^{10–12} In contrast to external regulation, self-regulation allows individuals to provide feedback,

thereby raising their awareness of their actual performance and feeding forward to influence their desired future performance.¹³

One condition of successful self-regulation is that professionals develop shared quality standards of service as well as the willingness and ability to critically appraise their own and their colleagues' performance.^{8,9,14,15} Ideally, self-regulation systems should address all competency domains and professional roles. This implies that self-regulation should not be limited to individual health care professionals, but should involve teams and provider organizations, as captured in the concept of clinical governance.¹⁶ Self- and peer assessment are strategies to self-regulate QI in health care.

In self-assessment, professionals reflect on their own practice according to predefined quality indicators.¹⁷ Research on the validity and reliability of self-assessment has shown that clinicians are poor self-assessors and that information from external resources—such as feedback from their peers—is needed to build up an adequate self-concept.^{18–20}

In peer assessment, participants critically appraise their peers' performance and give them constructive feedback, allowing them to strengthen adequate performance and identify poor performance early on. Peer assessment aims to encourage professionals to develop a critical attitude toward their clinical performance by introducing them to an assessor or auditor perspective.¹⁴

Supported by the Royal Dutch Society of Physiotherapy (KNGF), we developed a QI programme based on self- and peer assessment as an integral part of the comprehensive national quality assurance system, Quality in Motion. Our objective was to evaluate the impact of a QI programme based on self- and peer assessment to improve the client-centredness, effectiveness, and transparency of physiotherapy care and to justify nationwide implementation. The programme includes clinical auditing and benchmarking of patient-reported experience measures and patient-reported outcome measures.²¹ If it proves to be effective in advancing clinical performance, participating in self- and peer-assessment programmes will be a condition for enrolment in the quality register conducted by KNGF.

Two randomized controlled trials comparing the effectiveness of peer assessment with group discussions as a strategy for guideline implementation showed that peer assessment was more effective and associated with significantly higher levels of self-awareness than group discussions.^{22,23} An evaluative study of the critical success of this implementation strategy demonstrated that the strength of a performance-based programme lay in the fact that it triggered cognitive, emotional, and social commitment to the assessment task.²⁴ Regarding effective feedback for improvement, Ivers and colleagues^{25(p.4-5)} completed a meta-review, which identified that

feedback may be more effective when the source is a supervisor or colleague, when it is provided more than once, when it is delivered in both verbal and written formats, and when it includes both explicit targets and an action plan.

Research on the acceptance and use of performance feedback has shown that the credibility of the source has an impact on the acceptance of the feedback.^{26,27} In short, feedback aiming at QI should be provided by a trustworthy and credible source.

We developed a theory- and evidence-based QI programme, as advocated by the literature, aiming to enhance and ultimately self-regulate the quality of physiotherapy care.^{28,29} The programme was developed, implemented, and evaluated by using the four-stage framework of the United Kingdom's Medical Research Council, which involves (1) developing a programme, (2) assessing its feasibility, (3) assessing its impact on performance improvement, and (4) implementing the programme.³⁰ We reported the results for the first two steps, programme development and feasibility testing, in a previous study.³¹ The feasibility study showed significant improvement in performance. However, the sample size was small ($n = 64$), and all participants were part of a single professional network, which limited the internal and external validity of the results. According to the Medical Research Council framework, a full-scale study is necessary to validate these results using a larger sample size, including multiple professional networks.

This study reports on the third step, assessing the impact on performance improvement. Our research questions addressed the impact of the QI programme on clinicians' commitment to changing their professional behaviour and improving their performance.

METHODS

Design

We evaluated the impact of the programme on performance improvement in a non-controlled cohort study with a before-and-after design using mixed methods.³²

Participants and setting

Participants were physiotherapists working in primary care, organized into the four existing professional networks in The Netherlands registered by the KNGF. In primary care, physiotherapists work in monodisciplinary or multidisciplinary private clinics. They are accessible with or without physician referral.

The required sample size was theory and practice based. A standard of 5% performance improvement was estimated on the basis of the results Ivers and colleagues'²⁵ meta-review on the effects of auditing and feedback on professional practice. In the sample of 67 participants in our previous feasibility study,³¹ we observed self-assessed and peer-assessed performance

improvement of 6% ($p = 0.007$) and 4% ($p = 0.002$), respectively, for recordkeeping. Because the feasibility study included a single network, we aimed to verify those results in this study by including at least four networks and 200 physiotherapists.

The participants were invited by KNGF by means of a digital newsletter. Participation was voluntary and awarded with continuing education credits for the quality register.³³ We used knowledge brokers³⁴ to act as the links between the researchers and the participants, thereby enhancing programme implementation, and we used trained coaches to support feedback acceptance and to facilitate face-to-face discussions.²⁶ The knowledge brokers were physiotherapists who were board members of the participating professional networks, and the coaches were members of these networks, trained to perform this role.

All participating physiotherapists gave their informed consent online, whereas clients providing video recordings gave their informed consent in writing. This study was approved by the Medical Ethical Committee Arnhem Nijmegen (2015–1797). We adhered to the Standards for Quality Improvement Reporting Excellence guidelines for QI reporting.³⁵

Programme development

We selected two competency domains for performance assessment, both closely related to the IOM's quality domains (client-centredness, effectiveness, and transparency):¹ (1) client communication and (2) record-keeping. For each competency domain, we developed six performance indicators, guided by the Dutch professional competency profile,³⁶ which was developed according to the CanMEDS physician competency framework.³⁷ These indicators aimed to support self- and peer assessors in providing improvement feedback and to guide the process toward its intended outcomes.¹⁷ Appendix 1 (online) presents the performance indicators and their relationship with the IOM quality domains.

We then used software from Compusense Business Avionics (Oegstgeest, The Netherlands) to develop a Web-based assessment system that allowed the participants to upload assessment materials, such as client records, video recordings, and improvement plans; perform online scoring of themselves and their peers; and download the assessment results in the form of narrative peer feedback and scores. The Web site allowed the researchers to upload programme guides and instruction manuals for the participants, monitor participants' progress, and store and export qualitative and quantitative data. Access to information was limited and regulated according to participants' role. The software company adhered to all our stipulations about privacy of personal data for both clients and participants.

Programme content

The programme consisted of two cycles of online self- and peer assessment, followed by face-to-face peer-group discussions. The participants were provided with a programme guide that described the programme's aims, content, procedure, intended results, and expected investment of time and effort. Included was a manual for uploading and downloading the assessment materials and guidelines for providing and using feedback, informed by the best available evidence.^{25,26,28,38-45} An introductory meeting was scheduled to address programme issues, including any perceived barriers to participation.

In cycle 1, the participants uploaded a self-recorded video of a client interview and a corresponding client record; they were asked to limit the recording to a summarized discussion of the diagnosis and treatment plan. They first studied the uploaded materials, then self-assessed their performance by scoring the online performance indicators on a 5-point Likert scale (1 = *much improvement needed*; 5 = *no improvement needed*). (See Appendix 1 online for the performance indicators.) Second, they studied and evaluated the work of their peers. Finally, they provided written feedback about areas for improvement. Access to the uploads and evaluation of peers was provided only if the online self-evaluation had been completed, thus avoiding self-assessment bias. The programme lasted about 4 months. Appendix 2 (online) shows how the programme activities were scheduled, including the intended outcomes.

Access to the uploads and evaluation of peers was provided only if the online self-evaluation had been completed, thus avoiding self-assessment bias. Discrepancies between the indicator scores were used as input for the subsequent face-to-face discussions. Coaches had special access to the results of the peer groups they were coaching so they could monitor their online activities and prepare for the face-to-face group discussions. After cycle 1, participants were encouraged to reflect on their peers' feedback and to formulate personal goals according to the concept of commitment to change.⁴² Statements of commitment to change are advocated both to promote and to assess continuing education interventions, and they have proved to be effective in improving clinical performance.

In cycle 2, the process of self- and peer assessment was repeated, and the participants' personal goals were evaluated.

Programme delivery

Peer-group coaches were trained in three sessions by members of the research team who were physiotherapists and experienced trainers (MJMM, PJW, GAM, FD). They used samples of client records, video recordings, and role-play to train the coaches to provide, receive, and use performance feedback. The participants received a programme guide tailored to their role in the assessment process. The programme was managed by two

research team members (FD and Annick Bakker-Jacobs [ABJ]), who functioned as links between the research team and the others involved to allow us to identify implementation problems and resolve them early on.

Outcome measures

The impact on commitment to change was explored after cycle 1 using thematic analysis of the content of the personal goals and after cycle 2 by exploring the attainment of personal goals using an online questionnaire.⁴³ Participants were asked to indicate, on a 3-point Likert scale, to what extent their personal goals had been achieved (1 = *not achieved*; 2 = *partly achieved*; 3 = *completely achieved*).

We assessed the impact on performance improvement by comparing the indicator scores for each competency domain and for each corresponding performance indicator between cycle 1 and cycle 2.

Data sampling and analysis

We took a descriptive approach to the content analysis of personal goals. MJMM, FD, and Annick Bakker-Jacobs independently studied and coded a sample of the personal goals (formulated after cycle 1) of each physiotherapist. The analysis was guided by template analysis, which combines a priori codes (client communication and recordkeeping) and codes emerging from the data.⁴³ Differences in coding were discussed until we reached consensus, and a code book was created on the basis of this consensus. Subsequently, all personal goals were coded using Microsoft Excel 2013 (Microsoft Corporation, Redmond, WA). Codes were compared, and some codes were merged into higher order codes. Data were reduced by constantly comparing codes; this enabled us to identify themes and subthemes in the personal goals. Subthemes were counted and described as a percentage of the total of personal goals required to identify the participants' major learning needs. Questionnaire data on the attainment of personal goals as reported after cycle 2 were entered into IBM SPSS Statistics, version 22 (IBM Corporation, Armonk, NY), and the results were described.

Online scores for recordkeeping and client communication in the first and second assessment cycles were imported into IBM SPSS Statistics and statistically analyzed. We calculated and described the proportion of "not relevant/not applicable" scores and treated them as missing values in the analyses. Mean indicator scores for each competency domain were calculated for self- and peer assessment. Difference indicator scores were calculated by subtracting mean cycle 1 scores from mean cycle 2 scores. Because of the hierarchical structure of our study (participants nested within peer groups), we performed a multilevel (mixed-model) analysis.⁴⁴ We used a random intercept model using difference indicator score as the outcome variable and peer group as a random factor. Difference indicator scores were estimated as

Table 1 Participant Characteristics

Characteristic	Network				Total (<i>n</i> = 379)
	1 (<i>n</i> = 68)	2 (<i>n</i> = 87)	3 (<i>n</i> = 148)	4 (<i>n</i> = 76)	
No. (%) active online	65 (95)	85 (98)	143 (97)	71 (93)	364 (96)
No. of peer groups	14	17	30	12	73
No. of coaches	13	8	11	6	38
Age, y, mean (SD)	39.25 (10.88)	41.46 (12.23)	44.35 (12.27)	48.40 (12.34)	43.66 (12.40)
Work experience, y, mean (SD)	15.21 (10.25)	16.49 (12.03)	20.39 (11.80)	25.93 (11.80)	19.74 (12.14)
Gender, male, no. (%)	24 (35)	27 (31)	60 (41)	27 (36)	138 (36)
Specialisation, no. (%)					
Generalist	38 (56)	34 (39)	81 (55)	35 (46)	188 (50)
Specialist	30 (44)	53 (61)	67 (45)	32 (42)	182 (48)

mean difference, with 95% CIs. We described the differences as mean improvement percentages.

RESULTS

Four networks of physiotherapists participated in the programme (*n* = 379). We trained 38 coaches to support 73 peer groups. Table 1 shows the participants' characteristics.

Impact on commitment to change

In total, 303 participants uploaded their personal goals after cycle 1 (80%). We analyzed the content of all participants' personal goals and identified three major themes and 16 subthemes. The themes and subthemes were very similar to the performance indicators for client communication and recordkeeping (see Appendix 1 online). Table 2 shows an overview of all themes and subthemes, including the frequency with which the participants mentioned them.

The learning needs that emerged after cycle 1 addressed (1) client-centred communication, including shared decision making (54%); (2) recordkeeping, including measurable goal setting (24%); and (3) performance and patient-reported outcome measurement (15%) and other themes (7%). The results of goal attainment showed that 29% of the participants completely attained their personal goals, 64% partly attained them, and 7% did not attain them.

Impact on performance improvement

In total, 364 (96%) participants participated in the online self-assessment and peer assessment (4% were not active online and were only active in face-to-face sessions). Fewer than 364 participants were active online in both cycle 1 and cycle 2, as shown in Table 3. The mean impact of self-assessment and peer assessment on improvement in client communication and recordkeeping was calculated only for participants who were active in both cycles. Table 3 shows that the self-assessment scores for both client communication and recordkeeping were consistently lower than the peer assessment scores,

but the differences were smaller in cycle 2. The self-assessment and peer assessment scores improved significantly in cycle 2 for both communication and recordkeeping, although the self-assessment results showed greater improvement. Except for peer-assessed recordkeeping, the mean percentage change was greater than 5%.

Self- and peer-assessed improvement for client communication were 11% and 8%, respectively; for recordkeeping, they were 7% and 4%, respectively. Appendix 3 (online) shows that significant improvements were made on each individual indicator for client communication and recordkeeping and for self- and peer assessment. It also shows that the highest self-rated improvements were consistent with the highest peer-rated improvements; this applies to client communication indicator 3, "Are the patient reported outcomes and performance outcomes used to develop a treatment plan formulated in dialogue with the client?" and recordkeeping indicator 6, "Is the use of performance measures (clinical tests) adequate?"

DISCUSSION

We evaluated the impact of an innovative QI programme based on self-assessment and peer assessment of clinical performance in physiotherapy practice. Our hybrid programme, consisting of both online and face-to-face learning, created powerful learning experiences. The results showed that the programme was successful in supporting participants in achieving their personal goals and improving their performance on all quality indicators for client communication and recordkeeping. Most of the results for commitment to change focused on client communication and, to a lesser extent, on recordkeeping and performance and outcome measurement.

Because most physiotherapists in The Netherlands are familiar with evaluating clinical records (including the measurements used) but unfamiliar with evaluating client communication, this outcome was no surprise.

Table 2 Participants' Personal Goals: Self-Reported Goal Attainment, Themes, and Subthemes

Participants, themes, and sub-themes	No. (%) [*]
Participants (<i>n</i> = 379)	
No. who uploaded personal goals	303 (80)
No. who completed the questionnaire	242 (64)
No. of personal goals per physiotherapist, mean (SD)	3.36 (0.97)
Self-reported goal attainment (<i>n</i> = 242 [†])	
Not realized	18 (7)
Partly realized	154 (64)
Completely realized	70 (29)
Theme and sub-theme [†]	
Client-centred communication and shared decision making	
Clarify request for help	74 (7)
Allow for more dialogue	40 (4)
Convey clear and concise information; avoid technical terms	94 (9)
Structure and summarize information and verify that information is heard and understood	55 (5)
Pay more attention to non-verbal behaviour	14 (1)
Involve client in goal setting and treatment planning	68 (7)
Discuss PROMs results and use them as an aid for setting and evaluating measurable goals	95 (9)
Clearly communicate prognoses, align mutual expectancies, and share responsibilities	110 (11)
Subtotal for communication	550 (54)
Recordkeeping	
Improve conciseness	24 (2)
Improve completeness	60 (6)
Improve SMART goal setting, aligned with the request for help	92 (9)
Familiarize with software program	16 (2)
Improve transparency in clinical reasoning	49 (5)
Subtotal for recordkeeping	241 (24)
Performance and client-reported outcome measurement [†]	
Select and apply appropriate performance and outcome measures	72 (7)
Improve regular monitoring using performance and outcome measures	79 (8)
Subtotal for performance and outcome measurement	151 (15)
Other	
Guideline adherence/video recording/training protocols/critical performance appraisal	78 (8)

*Unless otherwise specified.

† Number of goals mentioned (percentage of total number of goals: *n* = 1,020).

PROMs = patient-reported outcome measures;

SMART = specific, measurable, acceptable, realistic, time-contingent.

Research on client communication in the physiotherapy domain has shown considerable room for improvement.^{45,46} We also learned that personal goals showed strong agreement with the distinct performance indicators for client communication and recordkeeping. Apparently, the performance indicators triggered a need for change in routine practice and guided the QI process toward its intended outcomes because personal goals for other areas were scarce (7%). In this respect, the use of performance indicators was effective. However, indicator scores in cycle 1 may have encouraged participants to take a reductionist (short-cut) approach to performance appraisal in cycle 2, narrowing the scope in areas that needed improvement. Encouraging feedback providers to underpin their online scores with narrative feedback, and encouraging feedback receivers to reflect on both quantitative and qualitative feedback, might help participants broaden their scope in areas of QI.

The results for performance improvement showed that the median percentage ranged from 4% to 11%, which approximates the findings of Ivers and colleagues's²⁵ meta-review. Self-assessment scores were lower than peer-assessment scores in both cycle 1 and cycle 2, indicating that participants either underestimated themselves or overestimated their peers. These outcomes are supported by our feasibility study³¹ and are in line with the literature on self-assessment and peer assessment.^{19,47,48} In cycle 2, the differences between the self-assessment and peer-assessment scores diminished because of the higher self-assessment scores—in particular, the scores for client communication. Awareness of clinical performance and an improved self-concept after cycle 1 may have contributed to the improvements made in cycle 2, as found in the feasibility study.³¹

The participants in the feasibility study were reluctant to expose their clinical performance to an audience, and, being insecure about their own performance, they were cautious about critically appraising their peers. We assume that extended exposure to critical performance appraisal, reinforcement of the desired performance by peers, and role modelling may have contributed to improved self-efficacy beliefs and increased motivation to work on personal goals, as explained by cognitive learning and self-determination theory.^{4,12} Further research is necessary to prove this assumption. These results argue for the implementation of self- and peer assessment in bachelor's physiotherapy programmes to prepare students for future continuous QI of their services.³⁵

Mean self-assessment and peer-assessment scores at baseline were high, showing limited room for improvement. This raises the question of how much room for

Table 3 Differences in Mean Indicator Scores between Cycle 1 and Cycle 2*

Score	No.	Cycle 1				Cycle 2				Difference						
		Range, min.–max.	Mean (SD)	Median	N/A (%) [†]	Range, min.–max.	Mean (SD)	Median	N/A (%) [†]	No. [‡]	MD	% change	<i>P</i> -value [§]	95% CI	ICC	
Client communication																
SA	351	1–5	3.69 (0.70)	3.76	5	314	2–5	4.14 (0.59)	4.17	3	311	0.44	11	0.01	0.36, 0.52	0.005
PA	351	2–5	4.05 (0.50)	4.08	2	333	2–5	4.36 (0.46)	4.42	1	328	0.30	8	0.01	0.24, 0.35	0.098
Recordkeeping																
SA	345	1–5	3.79 (0.66)	3.83	2	310	1–5	4.14 (0.58)	4.17	2	307	0.31	7	0.01	0.24, 0.39	0.000
PA	351	2–5	4.24 (0.42)	4.30	2	328	2–5	4.45 (0.40)	4.55	1	325	0.20	4	0.01	0.16, 0.24	0.096

*On a 5-point Likert scale.

[†]Proportion of scores perceived to be not applicable or not relevant.

[‡]Number of participants active in cycle 1 and cycle 2.

[§]Significant at the 0.01 level.

MD = mean difference; ICC = intra-class correlation coefficient; SA = self-assessment; PA = peer assessment.

improvement there is—in particular, for high-performing physiotherapists. Their motivation might be lower when the ceiling effect occurs, challenging the sustainability of the system for QI purposes. Creating more room for improvement requires accurate and critical performance assessors on the one hand and high performance standards on the other. We suggest that bachelor's physiotherapy programmes should further develop in both directions by (1) continuously improving critical self-assessment and peer-assessment skills, supported by well-trained coaches; (2) developing performance indicators for a variety of competency domains; and (3) setting higher performance standards that are tailored to, and informed by, high-performing professionals.

Looking at the improvements made on different performance indicators, the results show that the highest self-rated improvements were consistent with the highest peer-rated improvements; this finding strengthens the validity of the assessment outcomes.

The strengths of our study are that we developed an innovative QI programme that enabled our participants to provide personalized feedback, tailored to the competency domains that needed improvement. Programme evaluation was based on a high response and rich data. However, the study had a few limitations.

First, the physiotherapists self-selected their client records and video recordings, and these might not have reflected their authentic clinical practice. Nevertheless, we chose this option to give participants the opportunity to become accustomed to exposing their clinical behaviour to their peers and not to jeopardize group safety. Self-selected or not, video recordings and client records provided powerful learning materials, enabling the participants to critically reflect on their current performance. In addition, we assume that anticipating this learning experience might have triggered improvement beforehand.

Another limitation of the study is that the performance indicators were used for both educational purposes—to prospectively guide the QI process toward the programme goals—and scientific purposes—to retrospectively measure their impact on clinical performance. Knowledge of the performance indicators might have biased their true impact. Moreover, this was a non-controlled study testing a short-term intervention; thus, the robustness and sustainability of the results are currently unclear.

CONCLUSIONS

Our study demonstrated that self- and peer assessment, including conscious goal setting, are effective in enhancing physiotherapists' commitment to change and improving their clinical performance, and, despite the limitations mentioned, nationwide implementation in primary physiotherapy care is justified. Programme implementation in other settings might require making adjustments to the QI programme content and implementation strategy.

The results are promising for self-regulation of the quality of health care and relevant to all professionals and organizations engaged in bottom-up quality assurance. On the basis of the results, we propose a stepwise implementation of the QI programme, starting with informing professional networks, recruiting and training knowledge brokers and group coaches, and organizing introductory meetings to present best practices in self- and peer assessment.

A challenge to ongoing programme development is to design quality indicators that facilitate the QI process for both low- and high-performing physiotherapists and address a variety of competency domains. Further research should determine the sustainability of the results and their effects on client outcomes.

KEY MESSAGES

What is already known on this topic

Feedback interventions aiming at improving clinical performance are effective when the interventions and implementation are both theory and evidence based and when feedback is provided by a trustworthy and credible source.

What this study adds

This study shows that self- and peer assessment—embedded in a hybrid learning environment—are effective in enhancing clinical performance and that using performance indicators supports goal setting and the self-regulation of performance improvement.

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