VALIDITY AND RELIABILITY OF EGYPTIAN PHYSIOTHERAPISTS' COMPETENCIES QUESTIONNAIRE

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ABSTRACT

Background: Competence is a combination of knowledge, skills, values, behaviors, and attributes, enabling members to work safely, effectively, and legally within their specific scope of practice at any point in time. The purpose of this study development of a valid and reliable competencies questionnaire for physiotherapists.

Methods: The Egyptian Physiotherapists' competencies questionnaire was developed and approved by the Pediatrics departmental council. Three professors of physical therapy checked validity. 30 physiotherapists were asked to answer the questionnaire. They were interviewed to tell the meaning of the questions and review the questionnaire and write any comments they had about the nature and format of the items. This was done to detect any difficulties or unclear words. The internal reliability was measured using Cronbach's alpha. Inter item correlations were calculated separately for each domain using SPSS (24) to identify redundant items and measure internal consistency.

Results: the reliability coefficients for each indicator and stander Alpha coeﬃcients for the subscale scores ranged from $\alpha = 0.65$ (Communication and cultural competence) to $\alpha = 0.94$ (Professionalism and professional values and behaviors' and Achieve excellence), indicating moderate to excellent internal consistency reliability.

Conclusions: The study provides self assessment tool For competence of PT working in Egypt. The study also offers a novel assessment tool that has the potential to be used for future research.

Keywords: physiotherapists, competencies, questionnaire.

I. INTRODUCTION

Competence is a combination of knowledge, skills, values, behaviors, and attributes, enabling members to work safely, effectively, and legally within their specific scope of practice at any point in time. It involves an awareness of the limitations of personal and professional practice and depends on the participation of members Personalized, structured, and career learning to meet their identified development needs(1).

The competency-based approach focuses on outcomes related to the graduate’s skills, knowledge, and attitudes of graduates (2) that will allow them to function as qualified experts at the national or global level (2). Competence-based learning is based on each PT's ability and obligation, as well as the enhancement of the PT's independence (3); it necessitates unique learning strategies, checking, and assessment. The competency-based approach is focused on outcomes related to the skills, knowledge, and attitudes of graduates (4) that will allow them to work as competent professionals at the national or international level (5). Competence-based learning is based on the capacity and responsibility of each platinum and the event of the physiotherapist's (PT's) autonomy (6); it needs specific learning methodologies, monitoring, and tutoring we tend similarly as competency-based assessment strategies (7).
The evaluation of competencies in clinical areas is essential for PT: it allows the acquisition of competencies to be supervised, thus helping to improve competency levels and practice standards for PT (8).

The physical therapy practice standards are WCPT’s statement on the performance and conditions of their expectation that physical therapists are eager to provide high-quality professional physical therapy services to society(9). These standards provide the basis for physical therapy practice in all environments, including but not limited to clinics, hospitals, schools, and commercial establishments (10).

A questionnaire is a written, online, or oral tool that is used to collect data from individuals or groups and can be analyzed using qualitative and quantitative techniques (11).

The quality of the evidence depends on the reliability and validity of the outcome measure. Reliability refers to the consistency or repeatability of the measurement, that is, whether to repeatedly give the same result when measuring the same thing. Validity refers to whether the measurement reflects the content you want to measure. Validity is a function of reliability because unreliable measurements cannot be effective, but reliable measurements may lack validity due to built-in sources of bias (12). The purpose of this study development of a valid and reliable competencies questionnaire for physiotherapists.

II. SUBJECTS, INSTRUMENTATION, AND PROCEDURES

The current study is across—a sectional pilot survey was carried out from March 2020 to October 2020 A stratified and convenience sampling technique was used to select the study participants taking into consideration the inclusion criteria.

The sample of the pilot survey was composed of thirty physiotherapists of different specialties. It included 15 females and 15 males. They included PT practitioners (10), PT specialists (11) and PT consultants (9) of the participants represented various postgraduate degrees including 11 have MSC in physical therapy, 1 have Ph.D. in physical therapy They were recruited from different governmental hospitals including 2 from University hospitals and institutes,10 from General organization of teaching hospitals and institutes,1 from Health insurance organization, 15 from General hospitals and 2 The curative care and family center. in more than 6 governorates majority from Cairo and Giza Governorate and others from Ismailia, El-Mina, El-Sharkia Governorate, and El-Qubiya Governorate.

All participants both genders from were approved by the General Physical Therapy Syndicate of Egypt Physiotherapists, working in governmental hospitals in the majority of Egyptian governorates, were on the job, had a good reputation, and were interested to participate in this study were included. the following Physiotherapists who are working in academic institutions or police or arm force hospitals contributed to an abroad mobility or partnership program, had violated legal and/or professional legislations was excluded.

Instrumentations

The Egyptian Physiotherapists’ competencies questionnaire was developed and approved by the Pediatrics departmental council after realizing its validity and reliability.

The questionnaire included the basic information as well as professional, intellectual, management, leadership, and transferable competencies which were patient, research, and community-oriented (13).

The questionnaire was developed through six phases namely; drafting, Expert review, First revision, pilot survey, Implementation of the questionnaire and Data Analysis Statistical Design.

- The Egyptian Physiotherapists' competencies questionnaire has the following standards:
  1. Delivering a safe and effective service
  2. Physiotherapy management and treatment
  3. Evaluation of clinical care and services
4. Professionalism and Professional Values and Behaviors
5. Achieve excellence
6. Leadership, Administration, Management.
7. Autonomy and accountability
8. Consent and record-keeping and information governance
9. Working in partnership
10. Communication and cultural competence

- Each standard was assessed with simple indicators

Likert scale (5 levels) used to measure indicators. For each of the indicators, the participants checked the box that best represents the frequency with which he/she demonstrates the behavior where: 1 = Never; 2 = Rarely; 3 = Occasionally; 4 = Frequently; and 5 = Always (14).

Procedures

The physiotherapist's competencies questionnaire was developed according to Wood (15). Seven distinct tasks were applied to develop a high-quality questionnaire.

Each of these tasks requires a series of decisions and activities which included:

1. Review the information requirements necessitating a questionnaire.
2. Develop and prioritize a list of potential questions that will satisfy the information requirements.
3. Assess each potential question carefully.
4. Determine the types of questions to be asked.
5. Decide on the specific wording of each question to be asked.
6. Determine the structure of the questionnaire.
7. Evaluate the questionnaire.

I-Drafting

The first step in developing the questionnaire was to draft items of consideration for inclusion in the questionnaire (16).

The researcher developed the draft of the questionnaire taking into consideration the core values of the World Confederation of Physical Therapy (WCPT) (17) and the Charter Society of Physical Therapy (SCPT) (18), American Association of Physical therapy (APTA) (19). In addition, the researcher made use of some valued research papers of assessment of physiotherapist's competencies. Extensive searching of the existed articles was carried out and resulted in a large number of articles related to physiotherapist competencies. Those articles were carefully read to determine any factor that could be related to the physiotherapist's competencies questionnaire.

Item creation and design:

1. Avoid the “measurement error” by constructing survey items so that they capture the concept of interest as accurately as possible.
2. Items should be relevant.
3. Items should be answerable by the respondents (knowledgeable & competent to answer the questions).

4. Items should be clear (simplest language possible) and concise (as short as possible).

5. Items should not have double negatives.

6. Items should not have biased our leading phraseology.

7. Items should not have double-barreled questions – one point only.

8. Response categories must be mutually exclusive.

9. Response categories must be inclusive.

10. Response categories must be properly scaled for the level of data required.

11. Whenever appropriate and possible, items should be modeled after those on nationally recognized surveys (i.e. – U.S. Census, NCES Surveys, etc.)

12. To the highest degree possible, reduce the psychological cost of completing the survey by (a) making it as interesting as possible, (b) making it as easy to complete as possible, and (c) making it as short as possible.

13. Open-ended questions and areas for respondent comments should also be incorporated into survey instruments whenever appropriate.

**The questionnaire draft developed included the following aspects:**

Delivering a safe and effective service, Physiotherapy management and treatment, Evaluation of clinical care and services, Professionalism and Professional Values and Behaviors, Achieve excellence, Leadership, Administration, Management, Autonomy and accountability, Consent and record-keeping, and information governance, Working in partnership, Communication and Cultural competence (20).

The gained items were collected and refined by the researcher and a draft form of a fully organized questionnaire was developed. which represented the first formed questionnaire.

The supervisors reviewed the draft, edited and omitted some items on the evidence base, and sent the first version for expert review.

**II-Expert review**

Three professors of physical therapy were selected with at least 5 years' experience reviewed the draft form of the questionnaire and checked the face and content validity.

The questionnaire was covered with a letter of request for review and followed by a form for review.

According to (21) each expert was asked to determine if all important elements of the construct were addressed if questions are understandable and if terms were identified satisfactorily. In addition, their feedback about the contents of the questionnaire was provided on an individual basis.

**III-First revision**

The researchers revised the questionnaire based on the feedback gained from the reviewers (22).

**III. SUMMARY OF REVISION**

Q 1, 3, 8, 9, 13, 14, 24, 26, 31, 38, 42, 48, 49, 50, and 53 was edited, Q5, 6, 11, 28, 43, 44, 56, 57, 58, and 62 was deleted the standard of cultural competence merged with communication, Q15 was merged with Q14, and Q61 was merged with 60.
The final version of the questionnaire was implemented for the pilot survey

Review the questions for relevance.

A final review of the relevance of each question was carried out based on its goals (23) suggested that a survey designer assess relevance by briefly describing how each item in a questionnaire was presented in the final report from the survey results.

IV. Pilot test

The questionnaire was tested in the applied situation. As recommended 30 physiotherapists (24) will be asked to answer the questionnaire. The examiner has to conduct a questionnaire with the participants face to face and discuss the items with participants to determine difficulties when answering it alone. They were interviewed to tell the meaning of questions and review the questionnaire and write any comments they had about the nature and format of the items. Respondents were encouraged to comment on any aspect of the questionnaire, including unclear or ambiguous questions, the completeness and clarity of the response categories, biased questions, sentence structure, and threatening questions. This was done to detect any difficulties or unclear words. This process checked content validity (25).

- Inter item correlations were calculated separately for each domain using SPSS 25 to identify redundant items (26).
- The researcher tested internal consistency between index items.
- The internal reliability was measured using Cronbach's alpha.
- Test-retest reliability was measured using inter class correlation (ICC).

Scoring system of Egyptian Physiotherapists' competencies questionnaire

- Each indicator equals a 5-point score according to the Likert scale
- Standards score was as the following:
  1. Delivering a safe and effective service (20/255).
  5. Achieve excellence (30/255).
  6. Leadership, Administration, Management (30/255).
  8. Consent and record-keeping and information governance (30/255).

- Egyptian Physiotherapists' competencies questionnaire total score was 255 point

IV. IMPLEMENTATION OF THE QUESTIONNAIRE

The study was Survey and conducted on competencies of physiotherapists from the ministry of health hospitals included Public Hospitals, Insurance Hospitals, University Hospitals, and National Educational Institutions Teaching Hospitals and Institutes.
The objectives of the pilot survey were explained to the selected physiotherapists.

An invitation was sent out to all participants from the different hospitals of the ministry of health, the Arab Republic of Egypt who expressed interest in more information by giving their email addresses.

IV-Data Analysis Statistical Design

Data Analysis. IBM SPSS version 24.0 (IBM, Corp, Armonk, NY) (27) was used for data screening and statistical analysis of the data. To describe the characteristics of the participants in the sample, we calculated mean, SD, and range for age, and percentages for gender. To examine internal consistency reliability, Cronbach’s alpha (28), was calculated for the total EPTCQ score and each of the standers value subscale scores. Gable et al (29), reported that reliability estimates of 0.70 or higher are acceptable for effective measures. We established a priori reliability of 0.70 on both the total EPTCQ score and the subscale scores as sufficiently high for decision making.

We also calculated the standard error measurement SEM on the EPTCQ scores as a measure of absolute reliability. Smaller SEMs would indicate greater consistency between scores and smaller measurement errors (28).

V. RESULTS

The results of the pilot survey will be presented under the following sections:

Egyptian Physiotherapists’ competencies questionnaire reliability pilot survey.

1. Demographic characteristics of the participants for the pilot survey.

2. Reliability coefficients of the questioner and standards.

3. Inter-class correlation (ICC) coefficient between qualification degree and the EPTCQ.

Table 1: Mean value of age participants for the pilot survey.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean ±SD</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (year)</td>
<td>34.66 ±8.81</td>
<td>22.00</td>
<td>58.00</td>
<td>36.00</td>
</tr>
</tbody>
</table>

Table 1: shows the mean value of the age of thirty participants was 34.66+ _8.81 years. The minimum and maximum values were 22.00 and 58.00 years respectively with the range value equal 36.00 years.

Table 2: Distribution of participant's jobs in the survey.

<table>
<thead>
<tr>
<th>Current job</th>
<th>Number (n=30)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT practitioner</td>
<td>10</td>
<td>33.30%</td>
</tr>
<tr>
<td>PT specialist</td>
<td>11</td>
<td>36.70%</td>
</tr>
<tr>
<td>PT consultant</td>
<td>9</td>
<td>30.00%</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Table 2) show distribution of participant's job in the survey 10 participants work physical therapist practitioner with 33.3%, 11 participants work physical therapist specialist with 36.7%, 9 participant work physical therapist consultant with 30% of total survey respectively.

Table 3: Distribution of participant's work setting for the pilot survey.

<table>
<thead>
<tr>
<th>Work setting</th>
<th>Number (n=30)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>University hospitals and institutes</td>
<td>2</td>
<td>6.70%</td>
</tr>
</tbody>
</table>
Table 3 show the distribution of participants for work setting in the pilot survey 2 participants in university hospitals and institutes with 6.7%,10 participants in General organization of teaching hospitals and institutes with 33.3%,1 participant in Health insurance organization with 3.3%,15 participants in General hospitals with 50% and 2 participants in the curative care and family center with 6.7% of total study respectively.

The reliability coefficients for each standard in questionnaire Alpha coefficients for the subscale scores ranged from a = 0.65 (Communication and cultural competence) to a = 0.94 (Professionalism and professional values and behaviors' and Achieve excellence), indicating moderate to excellent internal consistency reliability.

<table>
<thead>
<tr>
<th>Axis</th>
<th>Questions</th>
<th>No. of items</th>
<th>Reliability coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivering a safe and effective service</td>
<td>Q1 – Q4</td>
<td>4</td>
<td>0.71</td>
</tr>
<tr>
<td>Physiotherapy management and treatment</td>
<td>Q5 – Q9</td>
<td>5</td>
<td>0.69</td>
</tr>
<tr>
<td>Evaluation of clinical care and services</td>
<td>Q10 – Q12</td>
<td>3</td>
<td>0.84</td>
</tr>
<tr>
<td>Professionalism and professional values and behaviors</td>
<td>Q13 – Q23</td>
<td>11</td>
<td>0.94</td>
</tr>
<tr>
<td>Achieve excellence</td>
<td>Q24 – Q29</td>
<td>6</td>
<td>0.94</td>
</tr>
<tr>
<td>Leadership, administration, management</td>
<td>Q30 – Q35</td>
<td>6</td>
<td>0.89</td>
</tr>
<tr>
<td>Autonomy and accountability</td>
<td>Q36 – Q39</td>
<td>4</td>
<td>0.78</td>
</tr>
<tr>
<td>Consent and record-keeping and information governance</td>
<td>Q40 – Q45</td>
<td>6</td>
<td>0.90</td>
</tr>
<tr>
<td>Working in partnership</td>
<td>Q46 – Q48</td>
<td>3</td>
<td>0.71</td>
</tr>
<tr>
<td>Communication and cultural competence</td>
<td>Q49 – Q51</td>
<td>3</td>
<td>0.65</td>
</tr>
<tr>
<td>All of EPTCQ</td>
<td>Q1 – Q51</td>
<td>51</td>
<td>0.97</td>
</tr>
</tbody>
</table>

Table (4) show Physiotherapy management and treatment and Communication and cultural competence subscales exhibited lower alpha coefficients, 0.69 and 0.65, respectively when compared with the other subscales. On Delivering a safe and effective service and working in partnership subscale, if one item was deleted, the value of alpha would increase to a = 0.71. Professionalism and professional values and behaviors' and Achieve excellence subscales the value of alpha would increase to a = 0.94, indicating excellent internal consistency reliability. the value of alpha for the entire 51-item EPTCQ was 0.97, indicating excellent internal consistency reliability.

Table 4: Reliability coefficients of the questioners and standards for (EPTCQ).

<table>
<thead>
<tr>
<th>Standards</th>
<th>Questions</th>
<th>ICC (95% CI)</th>
<th>SEM</th>
<th>MDC90</th>
<th>MDC95</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivering a safe and effective service</td>
<td>Q1 – Q4</td>
<td>0.71 (0.49 – 0.85)</td>
<td>0.54</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Physiotherapy management and treatment</td>
<td>Q5 – Q9</td>
<td>0.69 (0.47 – 0.83)</td>
<td>0.71</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Evaluation of clinical care and services</td>
<td>Q10 – Q12</td>
<td>0.81 (0.64 – 0.90)</td>
<td>0.57</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Professionalism and professional values and behaviors</td>
<td>Q13 – Q23</td>
<td>0.92 (0.87 – 0.96)</td>
<td>1.56</td>
<td>4</td>
<td>10</td>
</tr>
</tbody>
</table>

Table (5): Inter-class correlation coefficients (ICC), standard errors measurement SEM, and the minimal detect changes MDC for (EPTCQ).
we calculated the minimal detect changes (MDCs) to determine with statistical confidence the amount of change in the EPTCQ subscale and total scores that would represent an increase beyond measurement error (30). We also calculated the standard errors measurement SEM on the EPTCQ scores as a measure of absolute reliability. Smaller SEMs would indicate greater consistency between scores and smaller measurement errors (28).

The MDCs were calculated at the 90% and 95% levels of statistical confidence using the following formula as shown in table (8).

### VI. DISCUSSION

Assessing clinical competencies is important when preparing PT for clinical practice (31). A range of tools has been used to evaluate competencies (32). The literature on the assessment of the competence of physiotherapists in the Egypt context is limited. This is the first known study conducted in Egypt country to develop an assessment tool of competence in physiotherapy among physiotherapists in Egypt.

The tool used in this pilot survey was mapped to a competence framework developed for physiotherapy in Egypt. As such, this provided a novel way to understand current competence in physiotherapy in PT.

The novelty of this study is a key strength; however, a limitation of this study is the reliance on self-reported competence, recognizing the possibility of social desirability bias.

The assessment tool of competence in the clinical field is essential for PT; it allows monitoring the acquisition of competence, helping to improve the competence and standards of practice of PT (33). The tool for evaluation of competence takes into account the performance of the professional during interaction with the patient or client, involving clinical reasoning applied to decision-making. The evaluation self-assessment tool includes the conceptual commands necessary to provide health services, expert judgment, teamwork, communication, cultural skills, and professionalism (34).

In this article, we report on the development of a standardized tool of PT’s self-reported Professionalism attitudes, values, communication, and behaviors concerning competence in Physiotherapy. The pilot survey was conducted using a specifically designed tool, to measure self-reported competence of Physiotherapy across 10 standers of physiotherapist competencies The questionnaire used in this pilot survey based on world configuration (WCPT) of physical therapy and charters society for physiotherapy (CSP) and American physical therapy association (APTA) (35).

Evidence from the present pilot survey supported the initial validation of the newly developed EPTCQ for measuring PT competencies among PT. EPTCQ may be used to measure professional growth in practicing PTs, who may be practitioners or may have post-graduate studies. The findings also supported the hypothesized developmental nature of PT competencies that is, PT competencies are associated with the acquisition of knowledge and accumulated experiences over time.

Professionalism attitudes, values, and behaviors gained popularity and interest in the health care community over the past two decades due to reports of unprofessional behaviors among workers and demands for higher levels of professionalism from consumers (36). Within the physiotherapy profession, physiotherapists identified professionalism as one of the main requirements needed to gain public trust and rise to the status of a “doctoring profession”.

<table>
<thead>
<tr>
<th>behaviours</th>
<th>Q24 – Q29</th>
<th>0.94 (0.89 – 0.97)</th>
<th>1.09</th>
<th>3</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership, administration, management.</td>
<td>Q30 – Q35</td>
<td>0.88 (0.80 – 0.93)</td>
<td>1.02</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Autonomy and accountability</td>
<td>Q36 – Q39</td>
<td>0.78 (0.61 – 0.88)</td>
<td>0.53</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Consent and record keeping and information governance</td>
<td>Q40 – Q45</td>
<td>0.90 (0.83 – 0.94)</td>
<td>1.23</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Working in partnership</td>
<td>Q46 – Q48</td>
<td>0.69 (0.45 – 0.84)</td>
<td>0.43</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Communication and cultural competence</td>
<td>Q49 – Q51</td>
<td>0.57 (0.24 – 0.78)</td>
<td>0.45</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>All of EPTCQ</td>
<td>Q1 – Q51</td>
<td>0.96 (0.94 – 0.97)</td>
<td>6.43</td>
<td>15</td>
<td>42</td>
</tr>
</tbody>
</table>
profession” (37). Anderson et al (38) reported that PT exhibits responsibility, self-awareness, and timeliness during clinical education experiences. The focus on professionalism among medical and health professionals resulted in significant discourse on how to define, identify, and measure this construct.

Reliability we assessed the EPTCQ’s internal consistency using Cronbach’s alpha coefficient: α≥0.9 was considered excellent; 0.8–0.9 good; 0.7–0.8 acceptable; 0.6–0.7 doubtful; and 0.5–0.6 poor (8). We evaluated the inter-evaluator reproducibility for the scores obtained from each dimension and the total EPTCQ score using the interclass correlation coefficient (ICC). The ICC results were interpreted according to the Landis and Koch classification as follows: values of 0.81–1.00 indicated almost perfect agreement; values of 0.61–0.80 indicated considerable agreement; values of 0.42–0.60 indicated moderate agreement; values of 0.21–0.40 indicated fair agreement; values of 0.00–0.20 indicated low agreement; and values <0 indicated poor agreement (39) the value of alpha for the EPTCQ was 0.97, indicating excellent internal consistency reliability These values may be associated with the clarity of the evidence proposed for each item, which allows the evaluator to easily establish whether an evaluated student meets the criteria.

This pilot survey is both timely and useful, as it provides baseline data for the sample and demonstrates the importance of understanding the level of competence in Physiotherapy that Egyptian PTs have. The study also offers an assessment tool which subjects to further testing and validation could be used for further research and evaluation of competence in Physiotherapy.

To further improve the validity and reliability of the instrument, we recommend investigating the scale in other institutional settings in order to ascertain whether its validity and integrity remain intact in different clinical settings. Based on these applications, a confirmatory factor analysis should be conducted to confirm that the items on the adjusted scales accurately reflect the underlying constructs.

VII. CONCLUSION

Competencies are an important topic in all areas of health care. The need to develop instruments that produce valid and reliable scores will continue to grow as PTs strive to meet the high expectations of consumers. The results from this psychometric analysis support the use of the EPTCQ for the formative assessment of professionalism of PTS using the total EPTCQ score as it exhibits greater stability, consistency, and reproducibility than do the subscale scores. Future studies should include a more diverse sample and include both qualitative and quantitative data to more fully explore the complexity of the construct competencies. Finally, medical and health care professionals are encouraged to continue to explore methods that will accurately and consistently evaluate competencies.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest concerning the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Ethics approval and consent to participate

This study was approved by the Research Ethics Committee of the Faculty of Physical Therapy, Cairo University with register number P.T.REC/012/002396 and followed all the national and international standards that apply to research with human participants by the Declaration of Helsinki.

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