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EKHUT Internal Grant Report

Development of a reliable, valid measure to assess parents' and teachers' understanding of postural care for children with physical disabilities.

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Executive Summary

Schools play an important role in facilitating the day time aspects of postural management programmes for children with physical disabilities, enabling children to participate at school and engage in functional tasks associated with school work; however, the majority of teachers and teaching assistants are inexperienced and lack confidence in how to manage the needs of children with a physical disability (Hutton & Coxon 2010).

“Definition: A postural management programme is a planned approach encompassing all activities and interventions which impact on an individual's posture and function. Programmes are tailored specifically for each child and may include special seating, night-time support, standing supports, active exercise, orthotics, surgical interventions, and individual therapy sessions. Gericke (2006)

A small exploratory study of the views of teachers and teaching assistants recommended that information about postural care be made widely available to parents and teachers in order to assist them in their role as care givers for children with disabilities. In response to these findings, a booklet, the “A-Z of Postural Care” was developed by a team of researchers, therapists, teachers and parents of children with a disability (Hutton et al., 2009).

Aim

The aim of this study was to develop and validate an outcome measure designed to assess teachers' and parents' understanding, and knowledge of postural care, together with their confidence in providing such care. This measure will be used in the evaluation of a training programme, based on the content of the ‘ A-Z of postural care’ as a before and after measure of parents and teachers understanding, knowledge and confidence of postural care.

Method

An initial list of questionnaire items was developed via discussions with occupational therapists, physiotherapists, parents and teachers, based on the content of the A-Z of postural care. Items were designed to assess knowledge and understanding of postural care for children with disabilities; two further subscales were included to assess, confidence and concerns in relation to providing postural care in the school and/or home environment. The outcome measure was then tested for validity and reliability on 152 participants. Participants

were recruited from a range of professions and were divided into two groups to enable a comparison of scores between an experienced/knowledgeable group (e.g., occupational therapists and physiotherapists) and a less experienced/knowledgeable group (e.g., medical engineers, student physiotherapists, teachers).

Results

To assess the reliability of the scale we examined Cronbach's Alpha (a measure of internal consistency) for each of the three subscales and for the total scale. Results indicate adequate reliability ($>.70$) for all three subscales (Knowledge and Understanding: $\alpha = .96$; Confidence: $\alpha = .92$; Concerns: $\alpha = .87$) and for the total scale ($\alpha = .82$). Known groups validity analysis was also conducted to determine the validity of the measure. 'Known groups' expectation was defined as the experienced group showing statistically significant higher levels of knowledge, understanding and confidence, while also demonstrating lower levels of concerns compared to less experienced group. In line with expectations, the more experienced group had higher levels of knowledge and understanding ($M = 65.97$ vs. $M = 54.45$, $p < .001$); and confidence ($M = 77.76$ vs. $M = 63.64$, $p < .001$); and lower levels of concerns ($M = 12.81$ vs. $M = 15.98$, $p < .001$) than the less experienced group.

Conclusion

These results suggest that the outcome measure known as the 'postural care, understanding knowledge and confidence scale' (PC-UKC), is a valid measure of understanding, knowledge and confidence when providing postural care. This measure will be used as a before and after measure of parents and teachers knowledge and confidence which will form part of a wider evaluation of a training programme, based on the content of the 'A-Z of postural care'.

Introduction

This report describes the development of a validated tool - Postural Care, Understanding, Knowledge and Confidence (PC-UKC), which is designed to assess the understanding, knowledge and confidence of parents and teachers when providing day time postural care. The development of this tool is one aspect of a scheme of research that began with the exploration of the views of teachers and teaching assistants about their role in delivering postural care programmes in schools, and led over a period of two years to the development of an information booklet, the A-Z of postural care and a training programme for parents and teachers which is to be rolled out across Kent, Surrey and Sussex in 2012-2013. This validated tool will be used as a before and after measure and part of the evaluation of the training programme designed to support parents and teachers at home and school (Hutton & Coxon 2010).

Background

A significant number of children with a physical disability have a motor impairment that puts them at risk of deformity, compromises their function, and can lead to longer-term health problems including pneumonia, malnutrition, oesophageal reflux, impaired respiratory function and constipation (Veugelers et al., 2005). Cerebral palsy (CP) is the most common cause of motor impairment in young children, occurring in 2 to 3 per 1000 live births (Cans, 2000, SCPE 2004). Conservative therapeutic management of posture (see Box 1 Gericke, 2006) is currently the preferred treatment option, this approach has been demonstrated to limit motor impairment and improve motor control (Knapp & Cortes, 2002; Farley, 2003; Scrutton, Damiano & Mayston, 2004; Stavness 2006; Smith-Zuzovsky & Exner, 2004). In the context of the school setting, where provision of appropriate positioning of a child is important in facilitating comfort and promoting learning and functional ability, the benefits of adaptive seating to the activity performance and quality of life for children with disabilities is of particular significance (Saarni, 2007; Ryan et al., 2009; Rigby, Ryan, & Campbell, 2009; Ryan, in press).

Box 1. What is Postural Management?

A consensus statement has defined postural management as;

“..a planned approach encompassing all activities and interventions which impact on an individual’s posture and function. Programmes are tailored specifically for each child and may include specialised seating, night –time support, standing supports, active exercises, orthotics, surgical interventions and individual therapy sessions.” (Gericke, 2006)

To ensure the best possible care is provided to all children, occupational therapists and physiotherapists must work closely with parents and teachers, since they are the main care givers (Lightfoot, 2002; Humphreys & Poutney, 2006). There are, however, numerous challenges to the successful implementation of this collaborative approach. Many parents and teachers report that they receive insufficient information and support from therapists (Hutton & Coxon, 2008). The problems associated with this lack of support are compounded by the recognised stresses associated with looking after a physically disabled child (Mukherjee, Lightfoot & Sloper, 2000). Postural care programmes consume considerable resources, this includes the provision of complex equipment including specialist seating and standing frames, these items are challenging for parents and teachers to adjust, manage and maintain (Audit Commission, 2003; Healthcare Commission, 2008). There are also known manual handling risks to carers of children with physical disabilities (Contact a family, 2004; Beresford, 1994). Teachers require relevant information conveyed in a meaningful and understandable way in order to manage a child’s needs at school (Avramidis & Norwich, 2002).

These same barriers, to providing good postural management for children with physical disabilities attending mainstream schools, were also highlighted in research conducted by Hutton and colleagues. An exploratory study revealed that lack of comprehensive understanding of postural care amongst teachers and assistants acted as a barrier to the inclusion of children in the mainstream classroom (Hutton, 2008; Hutton & Coxon, 2011). Consultation with parents suggested that they feel similarly unsupported and that appropriate information and practical support from therapists about how to implement therapy programmes and use equipment varied (Hutton & Coxon, 2008). It is important therefore that parents and teachers are provided with sufficient information and support to implement

postural management programmes without risks to health and safety (to either the adult or child). It is believed therefore that greater understanding of the fundamental principles underpinning postural care by parents and teachers, could improve concordance with therapeutic goals, having positive benefits to the child's postural function and well-being (Poutney, Mulchahy, Clarke & Green, 2004).

Based on the results of this small exploratory study, and the recommendation that information and support to be made available to parents and teachers, an A- Z guide of postural care was developed and distributed.

Development of the content and format of the 'A-Z of postural care'

The 'A-Z of postural care' is a pocket sized booklet which provides accessible information and practical advice for teachers and parents about postural care. It was developed in response to the information gaps identified above and was developed by the therapists, researchers, parents and educators who formed the advisory group to the research study that explored the views of teachers and teaching assistants in mainstream primary schools (Hutton et al., 2009). The aim was for the booklet to raise awareness of good posture and its impact on every child's ability to learn and engage with the curriculum; highlighting the particular issues of children with physical impairments at school. Data gathered during the exploratory study had identified the important part that humour played in information sharing about the management of posture and this informed the content and style of the booklet. The 'A-Z of postural care' was designed in bright colours and produced in cheque-book size for ease of accessibility. The 'A-Z of postural care' has been well received by academics, practitioners, parents and teachers involved in the field of postural management. In 2011 the specialist section of the Chartered Society of Physiotherapists (ACPC) organised the distribution of the booklet to its membership .

Following the distribution of the 'A-Z of postural care' plans were made to develop an education program, based on the content of the booklet, to be made available to parents of children with disabilities and teachers and teaching assistants in mainstream schools who are responsible for children with physical disabilities. The educational program aims not only to

improve knowledge and understanding of postural care, but also to enhance parents' and teachers' confidence in relation to providing postural care in the school and/or home environment.

Developing a validated tool

Before we can develop this education program it is first necessary to devise a measurement tool to assess the constructs we intend to target in the current project. (i.e. knowledge, understanding and confidence in relation to postural care for children with disabilities), since no such measure could be identified. It is important that this measure is context specific (i.e. it assesses understanding, knowledge and confidence in the context of postural care for children with disabilities attending mainstream school) and that items are relevant to the target population (parents of children with disabilities and teachers/ teaching assistants who are responsible for the day-time postural needs of children with physical disabilities).

The current research therefore aimed to develop and validate a population and context-specific measure of parents' and teachers' understanding, knowledge and confidence in relation to postural care for children with physical disabilities. We refer to this scale as the 'postural care, understanding knowledge and confidence scale' (PC-UKC).

Methods

Participants

The sampling strategy was driven by the need to form two groups based on the extent to which individuals were experienced and knowledgeable about postural care. This requires the recruitment of a sample that will be experts in this area to compare against a group with less expertise; therefore we needed to target professionals in this area. It is important to have these two populations as a comparison to provide a test of 'known groups validity' (i.e. occupational therapists/physiotherapists would be expected to have greater knowledge of postural care than students training in these professions).

Accordingly, N = 152 participants (138 females and 14 males, M age = 40.5 years, range = 22- 60 years, SD = 10.25), were recruited via a number of paths. First, occupational therapists and physiotherapists who work with children and young people were recruited via an advert placed in the newsletter for the specialist sections within the College of Occupational Therapists (SS CYPF) and the Chartered Society of Physiotherapists (APCP). Second, a link to the online questionnaire was placed on a discussion board of a specialist website which acts as an information exchange and on line resource for professionals and others interested in postural care (<http://www.posture24.com/>).

Third, therapists, but also other groups including parents and carers of those with a disability, engineers and sales representatives involved in the technical and commercial aspects of postural care were also invited to participate at the annual conference of the Posture & Mobility Group. The PMG is a special interest group set up to disseminate information and advance knowledge about the posture and mobility needs of individuals with disabilities (<http://www.pmguk.co.uk/Home>).

Part of the sampling strategy involved identifying individuals who had some knowledge of postural care but were likely to be less knowledgeable than qualified practitioners. To this end an invitation to participate was circulated amongst students on relevant courses at Canterbury Christ Church University via a Blackboard (virtual learning environment) announcement.

Teachers with experience of special educational needs were invited to participate by members of the advisory group who circulated information about the online questionnaire with links to the specialist teaching service and teachers working in special schools in Kent.

For the purpose of the validity analysis this sample was split in to two groups based on professional status. Occupational therapists and physiotherapists formed the experimental group (n = 111) and 'other' professions, students and parents formed the comparison group (n = 41). Dividing the sample in to two groups enabled the comparison of mean scores on the scale between a group experienced and knowledgeable in postural care (physiotherapists and occupational therapists) and a less experienced /knowledgeable group (e.g., student OTs and physiotherapists, medical engineer).

As an incentive all participants were offered the chance to enter a prize draw to win one of two £25 gift vouchers. Ethical approval for the study was gained from the School of Psychology, University of Kent and all participants were treated in accordance to the ethical guidelines issued by the University of Kent and the British Psychological Society

Item Development

The initial phase of development was built around the main themes within the A-Z postural guide.

- Knowledge about equipment and other practical aspects of postural care
- Knowledge and understanding of the principles of postural care
- Knowledge and understanding about inclusive education for children with physical disabilities and potential barriers to inclusion.
- Identifying and dealing with the emotional challenges, stresses and anxieties associated with providing postural care
- Awareness of self care, risk and manual handling
- The team approach
- Call to action and contact details.

The next step was to develop the questions around these themes. This part of the development involved consultation with a number of different stakeholders involved in postural care to ensure all relevant areas were covered.

First, the advisory group that had been involved in the original development of the A-Z were asked to discuss and feedback ideas about the scale to the researcher. This group included occupational therapists, physiotherapists, parents, teachers and researchers. The advisory group provided feedback on the content of the scale and provide examples of situations based on real life scenarios and lived experience of those working in schools and parents at home.

Next, a draft questionnaire had been developed this was distributed to four NHS therapists' and a specialist teacher who were involved in the dissemination of the A-Z within primary schools in East Kent. Their feedback helped to further refine the questionnaire in terms of the

choice of item, the phrasing of the questions and the technical detail of the questionnaire. Time was taken to ensure the wording of the questionnaire was appropriate to the populations under consideration. The aim was to avoid technical terms and to use language that would be familiar to both teachers and parents. It was felt appropriate to separate the questionnaire into sections; knowledge about postural care, confidence in applying the principles of postural care and concerns about postural care. A further section relevant only to teachers enquired about the curriculum and school environment.

Third, a final version of the questionnaire was circulated to the advisory group for consideration prior to an online version that was developed to capture data from the sample of physiotherapists, occupational therapists, students, teachers and others described below.

The result was a multifactorial 74-item questionnaire (PC-UKC), which reflects the notion that providing postural care requires understanding of individuals' capabilities across a number of areas. Accordingly the PC-UKC scale consisted of the following subscales: (1) knowledge and understanding of postural care; (2) confidence in providing postural care; (3) concerns about providing postural care.

PC-UKC Measure

The scale includes a number of different response formats including a 4-point Likert scale from 1 (strongly disagree) to 4 (strongly agree) on which participants were asked to rate their level of agreement to a set of questions. Open-ended questions were also included to further explore previous training and possible concerns about providing postural care. Scores for each subscale were totalled, with a higher score indicating elevated levels of knowledge/understanding, confidence and concerns.

Understanding and Knowledge of Postural Care

This subscale contains 21 items split across three components that covered different areas of understanding and knowledge when providing postural care. The first of these components was related to knowledge and understanding of equipment, and included 8 items. Responses

for this component were measured on a 4 point Likert-type scale from 1 (strongly disagree) to 4 (strongly agree). Example questions included ‘I know which pieces of equipment I am expected to adjust’; ‘I understand how to adjust the equipment to make a child comfortable’.

The second component was related to knowledge and understanding of health and safety in relation to postural care and included 7 items. Responses for this component were again measured on a 4 point Likert-type scale from 1 (strongly disagree) to 4 (strongly agree). Example questions included ‘If required I know how to move equipment safely’; ‘I understand how to hoist safely’.

The third component assessed understanding about how postural care can benefit a child and included 5 items. Responses for this component were measured on a 3 point scale: 3 (Yes, I have sufficient knowledge already); 2 (I have some knowledge already but I would like to know more); 1 (I would like to enhance my knowledge and skills in this area). Example questions included ‘I understand how postural care may affect a child’s physical health; ‘I understand how postural care may affect a child’s learning’.

Confidence in providing postural care

This subscale contained 22 items divided across three components covering different areas of confidence when providing postural care. The first of these components was termed ‘general confidence’ and included 5 items. Three of the questions were measured on a 4 point Likert-type scale from 1 (strongly disagree) to 4 (strongly agree). Example questions included ‘I feel confident about providing postural care to a child with a disability’; ‘I am confident that if a child feels uncomfortable I will be able to assist them’ The remaining two questions utilised a 10 point Likert-type scale 1 (not confident at all) to 10 (very confident) to assess the extent of an individual’s confidence. For example, ‘On a scale of 1 to 10 how confident do you feel about providing postural care to a child with a disability’?

The second component was termed ‘confidence to overcome barriers’ and included 9 items that were based on Bandura’s self-efficacy scale (Bandura, 1977). Bandura’s scale assesses how confident an individual is at completing a task in the face of difficult, potentially challenging situations. Therefore, in terms of the current measure, the situations were

adapted so as to be relevant to the provision of postural care (e.g., I feel confident I can provide postural care, even if..... I do not have all the necessary equipment). Again responses for this component were measured on a 4 point Likert-type scale from 1 (strongly disagree) to 4 (strongly agree).

The third component was focused on confidence in using postural care equipment and included 8 items. Example questions included 'I feel confident using seating equipment; I feel confident enough to adjust desks and tables'. Again responses for this component were measured on a 4 point Likert-type scale from 1 (strongly disagree) to 4 (strongly agree).

Concerns about providing postural care

The final subscale contained 6 items focusing on concerns about postural care. This subscale included two components: concerns about the child and concerns about oneself. Concerns about the child included 4 items measured on a 4 point Likert-type scale from 1 (strongly agree) to 4 (strongly disagree). Example questions included 'I am concerned that I might cause pain by moving a child into a different position'; 'I am concerned I might be doing more harm than good'.

The second component focused on concerns about oneself and included 2 items and measured on a 4 point Likert-type scale from 1 (strongly disagree) to 4 (strongly agree) Example questions included 'I am concerned I might not have access to the necessary resources to provide good postural care'.

Open ended questions

Seven open ended questions were included so as to gain a deeper understanding of the challenges faced when providing postural care and to assess areas in which additional training may be useful. Example questions included 'Can you think of anything else that would make it difficult for you to provide postural care to a child'; 'Can you think of anything else that would make it easier for you to provide postural care to a child'.

Previous experience and training

Finally, a section of the questionnaire was also used to establish the extent to which individuals had previous experience using certain postural care equipment. Experience using Eight pieces of equipment (seating equipment, accessories on seating equipment, support chairs, standing frames, adjustable desks and tables, wheelchairs, hoists and slings, & toileting equipment) was assessed on a 'yes', 'no' format. Responses were scored '1' for yes and '0' for no; hence higher scores indicated more experience.

Design

The study employed a cross-sectional correlational design to establish reliability analysis (Cronbach's alpha). Known groups validity (i.e., occupational therapists and physiotherapists would be expected to have greater confidence and knowledge of postural care compared to those in 'other' professions) was also assessed utilising independent samples t-tests to establish if differences in understanding, knowledge, confidence and concerns between the two groups of participants were statistically significant (alpha level $p < .05$).

Hypotheses

- a) The reliability for the total scale and all subscales (knowledge/understanding, confidence and concerns) will be at a Cronbach's alpha level $\geq .7$
- b) The know groups validity analysis will demonstrate statistically significant differences between the two groups. For example, experienced occupational therapists and physiotherapists will report higher levels of understanding/ knowledge and confidence of postural care compared to the group of less experienced participants. It is also expected that the level of concern about providing postural care will be lower in the experienced participants compared those who have less experience.

Results

Reliability Analysis

Scale reliability analyses (Cronbach's alpha) were conducted to determine the internal consistency of the scale. Items with low item-total correlations ($\leq .3$) were excluded from the scale in order to obtain adequate scale reliability (alpha $\geq .7$ for the total scale; alpha $\geq .6$ for subscales).

As previously describe three subscales were included in the scale: (1) knowledge and understand of postural care; (2) confidence in providing postural care; (3) concerns about providing postural care. Reliability results for each of the three subscales will be examined separately before discussing the validity analysis.

Knowledge and understanding of postural care

This subscale consisted of three components covering different areas of knowledge and understanding when providing postural care. The first of these components was related to knowledge and understanding of equipment and included 8 items ($M = 26.21$, $SD = 4.80$). Cronbach's alpha of .93 demonstrated satisfactory internal consistency (Nunnally & Bernstein, 1994).

The second component was related to knowledge and understanding of health and safety in relation to postural care and included 7 items ($M = 24.20$, $SD = 3.82$). A Cronbach's alpha of .96 for this element also demonstrates satisfactory internal consistency. The third component assessed understanding in relation to how postural care can benefit a child and included 5 items ($M = 12.53$, $SD = 3.06$). Once more Cronbach's alpha of .95 demonstrated satisfactory internal consistency.

Finally scores from all three components were totalled to form a ‘understanding and knowledge’ subscale score. This 21 item subscale ($M = 66.09$, $SD = 10.59$) also demonstrated satisfactory internal consistency with a Cronbach’s alpha of .96. All item-total correlations for the subscale were above the threshold of .3 (range = .59 - .84).

Confidence in providing postural care

This subscale consisted of three components covering different areas of confidence when providing postural care. The first of these components was termed ‘general confidence’ and included 5 items ($M = 24.97$, $SD = 6.08$). Cronbach’s alpha of .84 demonstrated satisfactory internal consistency.

The second component was termed ‘confidence to overcome barriers’ and included 9 items ($M = 23.88$, $SD = 4.19$) that were based on Bandura’s self-efficacy theory (Bandura, 1977). Again this second component of the confidence subscale reached a satisfactory Cronbach’s alpha level of .87.

The third component assessed confidence using postural care equipment and included 8 items ($M = 25.01$, $SD = 5.00$). Cronbach’s alpha for this component of the subscale demonstrated satisfactory internal consistency at .91.

Finally scores from all three components were totalled to form a ‘confidence in providing postural care’ subscale score. This 22 item subscale ($M = 73.86$, $SD = 13.43$) also demonstrated satisfactory internal consistency with a Cronbach’s alpha of .92. In addition all item-total correlations for the subscale were above the threshold of .3 (range = .37 - .86).

Concerns about providing postural care

The final subscale focused on concerns about postural care and included two components: concerns about the child and concerns about oneself. Concerns about the child included 4 items ($M = 8.90$, $SD = 2.60$). The Cronbach’s alpha for this component was again satisfactory at .87.

The second component focused on concerns about oneself and included 2 items ($M = 4.78$, $SD = 1.62$). The Cronbach's alpha for this component was also satisfactory at .84.

Finally scores from both components were totalled to form a 'concerns about providing postural care' subscale score. This 6 item subscale ($M = 13.69$, $SD = 3.72$) also demonstrated satisfactory internal consistency with a Cronbach's alpha of .87. In addition all item-total correlations for the subscale were above the threshold of .3 (range = .50 - .80).

Final Scale

Although all subscales and the respective components demonstrated satisfactory internal consistency it was also important to confirm the reliability of the full scale. To this end, all three subscales were analysed to establish if the PC-UKC scale was a reliable measure. In line with the previous reliability results, Cronbach's alpha for the scale was .82, thereby demonstrating a satisfactory level of internal consistency. In addition all item-total correlations for the subscale were above the threshold of .3 (range = .70 - .89).

Correlations between subscales

Correlations were also performed on the three subscales to further confirm the findings illustrated by the reliability analysis. Preliminary analysis revealed that scores on the scale were of 'non normal' distribution, with scores negatively skewed (too many high scores) Therefore all bivariate correlations were analysed using the Spearman's correlation analysis.

Understanding and knowledge were highly positively correlated with confidence. That is, as levels of understanding and knowledge increased so did levels of confidence. In addition understanding and knowledge was negatively correlated with concerns. That is, as levels of understanding and knowledge increased, concerns about providing postural care decreased. Finally, the correlation between confidence and concerns was also negatively correlated. That is, as levels of confidence increase, concerns about providing postural care decrease. The correlations between the three subscales are detailed below in Table 1.

Table 1

Bivariate correlations and descriptive statistics for the three subscales

Subscale	M	SD	K_U	Confidence	Concerns
K_U	66.09	10.59	1	.84**	-.64**
Confidence	73.86	13.42	.84**	1	-.72**
Concerns	13.68	3.72	-.64**	-.72**	1

** Correlation significant at $p < .01$

Validity Analysis

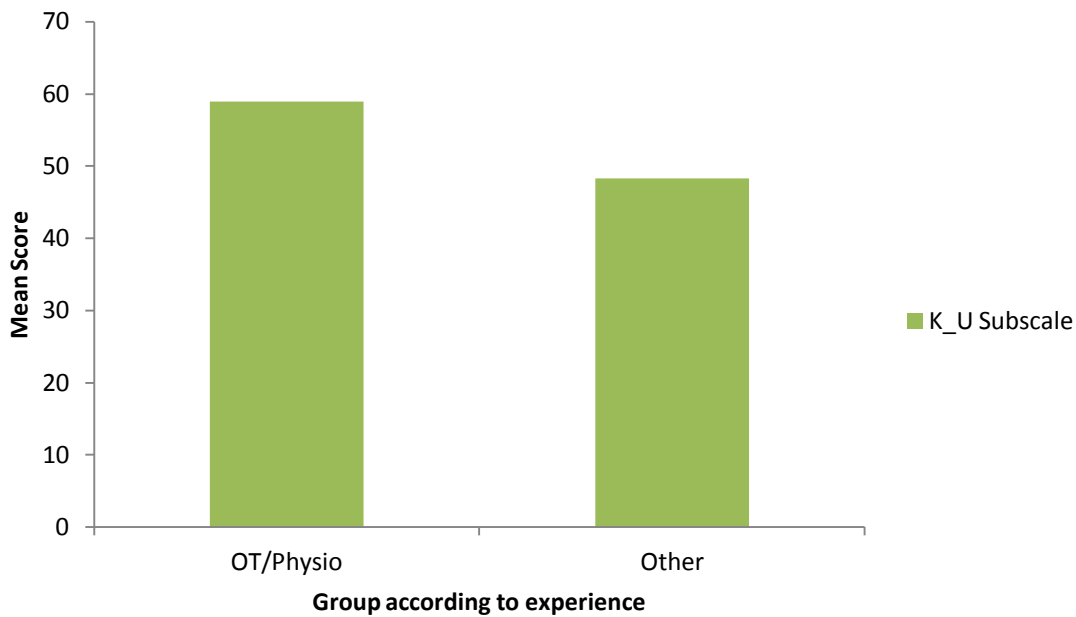
To examine 'known groups validity' independent samples t-test were utilised to establish if levels of understanding/knowledge, confidence, and concerns between the two groups (occupational therapists and physiotherapists vs. other professions) were statistically different. Again, due to the responses across both groups being of a 'non normal distribution' it was decided to utilise a non-parametric test (Wilcoxon's Test) to examine potential differences between the two groups.

Knowledge and understanding of postural care

In line with expectations, levels of knowledge and understanding in the experienced group of Occupational Therapists and Physiotherapists were higher (Mdn = 71.00) compared to the less experienced group of 'other' professions (Mdn = 56.5). This difference between the two groups was significant: $W_s = 1834.00$, $z = -5.69$, $p < .001$, $r = -0.46$. Mean values for the two groups for this subscale are displayed in Figure 1.

Figure 1

Mean values for knowledge and understanding subscale.

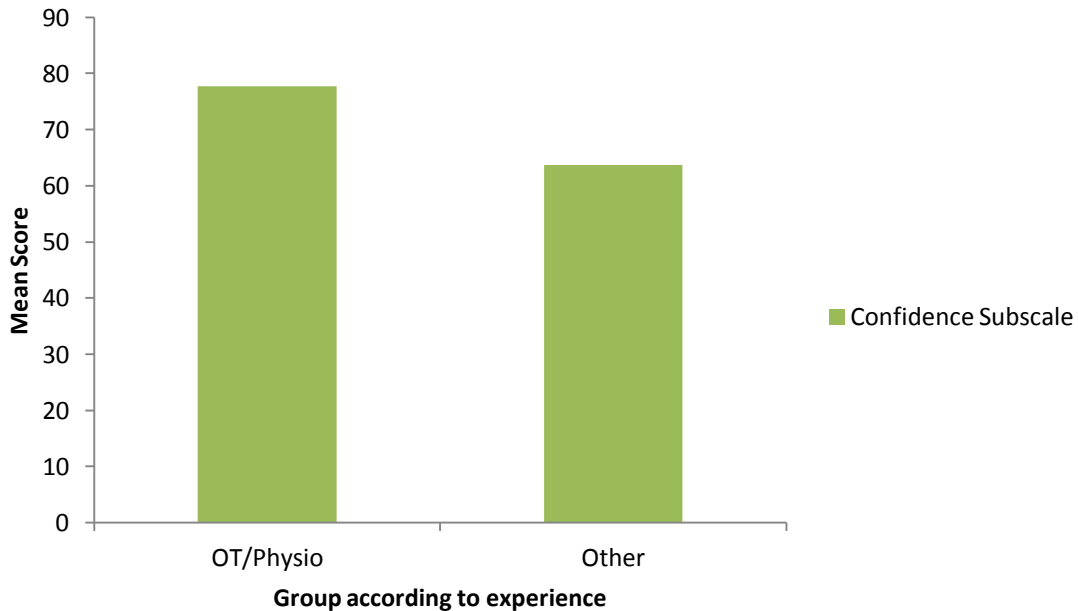


Confidence in providing postural care

In line with expectations, the group of experienced Occupational Therapists and Physiotherapists reported higher levels of confidence (Mdn = 78.50) compared to the less experienced group of 'other' professions (Mdn = 63.00). This difference between the two groups in confidence was also significant: $W_s = 1953.00$, $z = -5.19$, $p < .001$, $r = -0.42$. Mean values for the two groups for this subscale are displayed in Figure 2.

Figure 2

Mean values for confidence when providing postural care subscale.

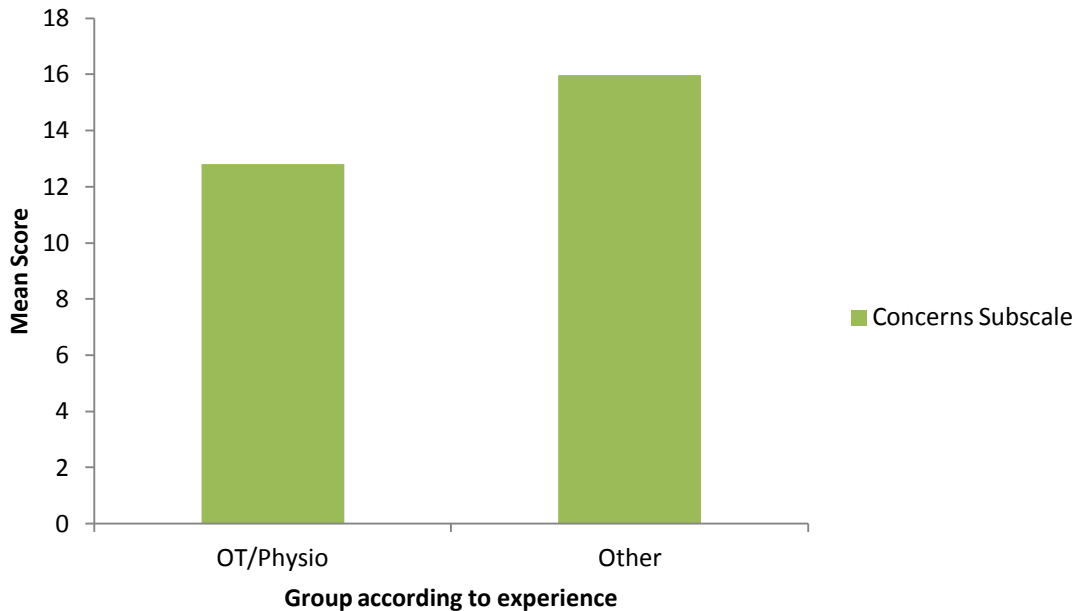


Concerns about providing postural care

Finally, and again in line with expectations, the group of experienced Occupational Therapists and Physiotherapists also reported lower levels of concerns (Mdn = 13.00) when providing postural care compared to the less experienced group of 'other' professions (Mdn = 17). Again, this difference between the two groups did reach an acceptable level of significance: $W_s = 7303.00$, $z = -4.60$, $p < .001$, $r = -0.37$. Mean values for the two groups for this subscale are displayed in Figure 3.

Figure 3

Mean values for concerns when providing postural care subscale.



Qualitative Analysis

In addition to the quantitative analysis, the questionnaire also included a number of open-ended questions. The first of these questions asked participants to list ‘anything that would make providing postural care easier’. Overall 110 of the 152 participants provided a response to this question. An analysis of these responses revealed a number of common themes outlined below.

Training

A number of responses emphasised the benefit that further training (for themselves and for others) would have. For example the importance of training all individuals involved in providing postural care:

“Training to school and support staff to enable them to learn the advantages of postural management and so they get confident in using different equipment and in aligning children properly” (Participant 121)

“If everyone in the medical profession, education, respite placements and parents had access to good training on the importance and benefits of postural care and ways to consider and respect the individual child’s needs” (Participant 55)

Participants also commented that an increase in their own training would also make things easier:

“More practical experience at university /practical sessions with educational sessions from postural OTs” (Participant 38)

“More training on special seating and moulding: (Participant 174)

Resources

The need for increased resources – staff, funding, equipment- was also a prevalent theme that ran through many of the responses. For example, responses highlight issues across areas such as access to equipment:

“Quicker access to appropriate equipment” (Participant 109)

“Adequate access to equipment. Shared equipment store across health, social care and education would reduce a lot of waste and provide prompt solutions to needs”. (Participant 90)

A need for more appropriately trained staff:

“More staffing with appropriate experience” (Participant 50)

And more funding to be available:

“Better funding for certain postural care items such as sleep systems” (Participant 64).

Increasing knowledge and understanding of postural

Another theme focused on how increasing knowledge and understanding of postural care in schools and in the home environment would ease the barriers to providing postural care. For example many responses mention the advantage of increasing knowledge and understanding for parents. Consequently this could increase adherence to postural care management programs as parents become more aware of the benefits.

“Families (first circle of support) need training to understand the principles and why positions can be destructive. Once they have understanding, they have more confidence to put the principles in practice.” (Participant 81)

“The team around the child to be fully aware of the postural care needs and willing to support them” (Participant 143).

Individuals were also asked to identify situations that would make providing postural care more difficult. Again, 110 of the 152 participants provided some comments to this question. An analysis of these responses often mirrored the areas already identified as factors that would make things easier (e.g., resources, lack of knowledge and understanding of postural care, training), but also revealed a number of different themes.

Lack of support in schools and from the family

A number of responses referred to a lack of support by teachers and teaching assistants in providing a high standard of postural care to a child under their care. For example:

“I am concerned that postural care is not a high enough priority within school and that school staff feel they do not have enough staff to provide the level of care needed by the children” (Participant 96)

“Unwillingness of school staff to support programmes” (Participant 143)

A number of participants also cited a lack of support from family members and carers as a factor that increases difficulty. For example:

“Resistance from child, family or carers to the postural care plan” (Participant 40)

“Lack of cooperation with the postural care plan, aims and objectives from parents and others involved in the care” (Participant 135)

Lack of consensus about care

Respondents also commented on the lack of support, on how difficult providing postural care can be when there is a lack of consensus between carers and professionals about how to proceed in the best interest of the child. This theme was illustrated by a number of responses:

“If family, carers, other professionals are not in agreement about the postural care required” (Participant 6)

“When parents or school staff do not agree with the OT advice for postural support or do not comply with this” (Participant 24)

Time constraints

This was an issue raised by respondents in relation to the time available to make a diagnosis and time available to consult with the parents.

“Time to complete a proper assessment is vital. When rushed, it is probable that you couldn’t assess for all postural needs, is seating lying standing toileting and bathing”. (Participant 51)

“Lack of time in school or home to give adequate training and support to parents and school staff”. (Participant 69)

Responses collected from these two questions echo the concerns raised by the initial research that informed the first project (development of the A-Z of postural care booklet) by reaffirming that increasing knowledge and understanding of postural care is key to the provision of this care.

Discussion

The strength of the measure is that it was developed from the evidence based content of the A- Z of postural care. In developing the items for the scale the consultation phase ensured that the views of professional and lay experts in the field of postural care, including parents teachers and therapists who care for and work with children with disabilities on a regular basis were incorporated. The scale therefore draws directly on the issues and experiences of those involved with postural care at school and home. The involvement of parents in the development of the scale is particularly important in the light of a shift towards patient involvement in the evaluation of health care interventions more generally and the development of outcome measures (Fitzpatrick et al., 2006).

A second strength of the measure is the inclusion of questions that assess self-efficacy and confidence in overcoming barriers to providing postural. Previous research has identified the importance of including such measures when assessing an individual’s capability of completing a specific task or behaviour (Bandura, 2006). Therefore, in terms of taking the measure forward and utilising it in a training context, it is important to assess that self-efficacy is improved upon as this facilitates increased confidence to master the skills involved in providing good postural care.

The response rate to the questionnaire from occupational therapists and physiotherapists working with children with disabilities indicates a strong level of interest and involvement in the development of the questionnaire as a tool for future research. Several of those therapists responding followed up with email queries and expressed an interest in finding out more about the research. Amongst these the research team received contact from therapists and parents involved with ‘night time’ postural care drawing attention to the distinction between night -time and day-time postural care interventions. As a result of these helpful comments the researchers decided to define the questionnaire as relating specifically to ‘daytime’ postural care. Postural care is defined as a 24 hour approach – the particular focus of this research has been on the management of the child during the day specifically at school and home.

The response from students was disappointing but this could be attributed to the timing of the questionnaire distributed when the students were completing assignments or out on placement. An alternative explanation could be that postural care is a specialist area of practice and as students they were not sufficiently aware of or involved with postural care to engage with the questions. It is known that relevance/interest affects the response rate of questionnaires (Edwards et al., 2002). Similarly it was difficult for us to identify and engage teachers willing to complete the questionnaire. The original questionnaire did include a section specifically focused on the inclusion of children in the curriculum targeted at teachers, which we were unable to validate during this phase of the research, because of the small number of teachers who responded. Again timing of the questionnaire distribution towards the end of term may have affected the response of teachers to the questionnaire. Further development of this aspect of the measure is planned to ensure the relevance and appropriateness of this section of the questionnaire.

Future directions

This scale was design for use in a postural care training program that will be delivered in settings in Kent, Surrey and Sussex as part of a wider study which will explore the effectiveness of an education program for teachers and parents involved in postural care. The measure will be utilised before and after a postural care training programme to assess whether

levels of knowledge/understanding and confidence increase from baseline as a result of the intervention. Results from the research will also be disseminated in the relevant professional journals and it is hoped that other researchers will see the benefit of using this validated outcome measure to assess the constructs identified.

Conclusions

Reliability results suggest that the scale, and its three subscales, is a reliable measure of knowledge/understanding, confidence and concerns about postural care. All Cronbach's alphas were above the threshold and therefore we can conclude that the PC-UKC is measuring the factors we anticipated. The known groups validity analysis also revealed the expected results. Specifically, individuals with expertise in providing postural (i.e., Occupational Therapists /Physiotherapists) reported higher levels of knowledge/understanding and confidence and lower levels of concerns compared to the group with less experience (i.e., student OTs and physiotherapists, medical engineer). Furthermore this difference was significant at the .05 alpha level. Therefore it can be concluded that the PC-UKC scale is also a valid measure of knowledge/understanding, confidence and concerns.

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