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Validation of the Youth Acute Pain Functional Ability Questionnaire in Children and Adolescents Undergoing Inpatient Surgery

Jennifer A. Rabbitts^{*,†}, Rachel V. Aaron^{*,‡}, William T. Zempsky[§], and Tonya M. Palermo^{*,‡}

^{*}Department of Anesthesiology and Pain Medicine, University of Washington, Seattle, Washington

[†]Center for Clinical and Translational Research, Seattle Children's Hospital, Seattle, Washington

[‡]Center for Child Health, Behavior and Development, Seattle Children's Hospital, Seattle, Washington

[§]Division of Pain and Palliative Medicine, Connecticut Children's Medical Center, Hartford, Connecticut

Abstract

Half of children admitted after surgery experience intense pain in hospital, and many experience continued pain and delayed functional recovery at home. However, there is a gap in tools available to measure acute functional ability in pediatric postsurgical settings. We aimed to validate the Youth Acute Pain Functional Ability Questionnaire (YAPFAQ) in a large inpatient pediatric surgical population, evaluate its responsiveness to expected functional recovery, and develop a short form for broad clinical implementation. The YAPFAQ is a self-report measure assessing acute functional ability, developed in children admitted for acute sickle cell pain. We evaluated psychometric properties of the measure in 564 children ages 8 to 18 years admitted after surgery. A sample of 54 participants completed the YAPFAQ daily for 3 days after major surgery to assess responsiveness. The measure showed good reliability (Cronbach $\alpha = .96$) and construct validity, with expected relationships with physical health-related quality of life ($r = -.53$, $P < .001$) and pain intensity ($r = .42$, $P < .001$). YAPFAQ scores decreased over time showing good responsiveness to expected recovery. A 3-item short form of the YAPFAQ showed promising psychometric properties. Early assessment of functioning after surgery may identify children at risk for poor functional outcomes and allow targeting of therapies to improve postsurgical recovery.

Keywords

Postsurgical pain; functional recovery; acute pain; health outcomes; pediatric pain

Address reprint requests to Jennifer A. Rabbitts, MB, ChB, Seattle Children's Hospital, 4800 Sand Point Way NE, MB.11.500.3, Seattle, WA 98105. jennifer.rabbitts@seattlechildrens.org.

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Each year, >1 million children undergo inpatient surgery in the United States.⁴ Approximately 50% will experience moderate-severe pain while in the hospital after surgery.⁸ Despite recognition of acute postsurgical pain as a critical factor in recovery after surgery, this rate has remained unchanged over several decades.^{3,8,19} Many children continue to experience intense pain during the weeks after discharge from the hospital, which significantly affects their postoperative health outcomes. At 1 month after hospital discharge, 10% of children report moderate-severe pain, which is associated with deterioration in physical and psychosocial health after surgery.¹⁶ Recent research shows that these problems with recovery may persist long-term for a sizeable group of children, with approximately 20% experiencing persistence of pain and associated functional impairment extending over 12 months after major surgery.^{13,17} Early detection of slower functional recovery during the initial days after surgery could allow implementation of closer postdischarge follow-up and targeting of therapies to improve health outcomes for these children.

Although measures assessing functional ability have been validated for youth with chronic pain, there is a gap in tools available to measure acute functional ability, which can be applied in an inpatient pediatric postsurgical setting. Existing functional measures in children predominantly evaluate function over weeks to months, for example, the Pediatric Quality of Life Inventory (PedsQL), the Patient Reported Outcomes Measurement Information System Pediatric Scales, and the Child Activity Limitations Interview.^{7,14,20} Items assessed on these measures include activities relevant to the home setting (eg, sports, schoolwork). These measures have vast utility spanning clinical and research settings; however, they do not assess acute pain-related functioning and are not suited for monitoring acute patterns of recovery in the hospital. In the context of acute postoperative pain, the Parents' Postoperative Pain Measure and the Pediatric Quality of Life Questionnaire are observational measures assessing function and behavior for use by parents to evaluate their child's pain at home after day surgery^{2,11} but are also not suitable for monitoring recovery in the hospital. We therefore sought to validate a measure of acute functional ability with the goal of clinical application in pediatric surgical populations.

Recently, Zempsky and colleagues developed and validated the Youth Acute Pain Functional Ability Questionnaire (YAPFAQ) to evaluate functional ability in children during hospitalization.²² The 12-item measure was validated in children with sickle cell disease admitted to the hospital for an acute vaso-occlusive pain episode. The YAPFAQ assesses areas of functioning relevant to acute pain, for example, mobilization out of bed and ability to perform self-care, which can be assessed within the hospital setting. The measure assesses function in a 24-hour time frame and is therefore suited for monitoring daily change in function during acute recovery.

The aims of the present study were therefore to: 1) validate the YAPFAQ in a large inpatient pediatric surgical population, 2) evaluate responsiveness of the measure to expected functional recovery during hospitalization in a sample of children admitted after major surgery, and 3) develop a new short form amenable to broad clinical implementation in the hospital setting. We hypothesized that the YAPFAQ would have good construct validity as

shown by expected positive correlations with pain intensity and physical health on the PedsQL. Further we hypothesized that the YAPFAQ would be responsive to daily improvement in function during the first 3 postsurgical days in the hospital.

Methods

To accomplish our aims we conducted 2 studies: study 1 was a cross-sectional assessment of pain and function during hospitalization in a large cohort of children admitted after inpatient surgical procedures; and study 2 was a daily assessment of pain and function during the first 3 postoperative days in a sample of children hospitalized after major surgery. All procedures were approved by the institutional review board. Parents provided consent and children gave their assent before participation in the studies. Children in both samples were reimbursed with gift cards for their participation.

Procedures

Study 1—Participants were initially approached by the Outcomes Assessment Program at a children's hospital in the northwestern United States within 72 hours after child admission after surgery. The Outcomes Assessment Program is an ongoing hospital program assessing satisfaction with hospital care and quality of life in all eligible and consenting families with a child admitted to the hospital. For the purposes of the present study, children were also asked to complete measures of pain intensity and function as part of this assessment. During the time period of this study, 89% of families with children admitted to surgical units were approached for potential participation by the Outcomes Assessment Program. The overall participation rate among eligible families was 70%. After providing consent, children completed self-report questionnaire measures (YAPFAQ, pain intensity, PedsQL) in English or Spanish using a notebook computer provided by the Outcomes Assessment Program. Research assistants abstracted clinical characteristics from the medical record.

Study 2—Participants were comprised of children enrolled in an ongoing longitudinal study examining outcomes over 1 year after major surgery. This sample of children was chosen for assessment of responsiveness of the measure during hospitalization, because they are typically inpatient for 3 or more days. During the time frame of this study, 113 children meeting eligibility criteria were approached for potential participation in the ongoing longitudinal study, and 63 (56%) of those approached agreed to participate. Fifty-three of the 63 children enrolled into the ongoing longitudinal study participated in the present study. For the purposes of this study, children completed the YAPFAQ measure daily between 2 and 5 PM for 3 days after surgery (excluding the day of surgery), either on paper or electronically using RedCAP.

Participants

Study 1—Five hundred sixty-four children age 8 to 18 (mean = 13.0, SD = 3.1) years admitted to inpatient surgical services participated in this cross-sectional study. Children undergoing inpatient surgery were eligible for inclusion; day (outpatient) surgeries were not eligible for inclusion. Children were also excluded from the study if they did not speak English or Spanish, were developmentally delayed, had been admitted to the hospital in the

preceding 2 months, had social service involvement for a safety alert, were in strict protective isolation for infective risk, or did not have a parent/guardian available for consent. Surveys were completed in English by 511 (90.6%) families, and in Spanish by 53 (9.4%) families.

Study 2—Fifty-three children ages 10 to 18 ($M = 14.3$, $SD = 1.9$) years undergoing major surgery completed assessments on 3 consecutive days after surgery. Children were eligible for this study if they were admitted for elective inpatient spinal fusion, hip/femur osteotomy, or pectus deformity repair surgery. Exclusion criteria included non-English speaking families, developmental delay, presence of a serious comorbid condition (eg, cancer, neuromuscular disease, previous major surgery), or child does not reside with their parent/legal guardian.

Measures

Sociodemographic Characteristics—Parents reported on children's age, sex, race/ethnicity, and parent education level.

Clinical Characteristics—Surgical category, length of hospital stay, and medical complexity were collected from patient's electronic medical records. Medical complexity was identified on the basis of diagnosis codes according to the Pediatric Medical Complexity Algorithm; participants were categorized as: 1) without chronic disease, 2) noncomplex chronic disease, or 3) complex chronic disease. The Pediatric Medical Complexity Algorithm has good sensitivity and specificity in pediatric inpatients.¹⁸

The YAPFAQ—The YAPFAQ is a 12-item self-report questionnaire assessing acute pain-related physical function over the preceding 24 hours.²² Patients rate their perceived level of difficulty performing each activity that day on a 5-point Likert scale with anchors 0 = "not difficult", and 4 = "extremely difficult." Example items include "getting up from the bed", "taking a shower or bath", and "turning in bed". Scores are summed for a total possible score of 48, with higher total scores indicating greater difficulty performing functional activities. This measure has been found valid and reliable in assessment of function in children with sickle cell disease admitted to the hospital for acute pain management.

Pain Intensity—Current pain intensity was rated using an 11-point numeric rating scale, with anchors "0" indicating "no pain" and "10" indicating "worst pain possible." The numeric rating scale is a valid and reliable measure of pain intensity during acute postsurgical recovery.¹²

The PedsQL—The generic core PedsQL scale contains an 8-item subscale assessing physical functioning and a 15-item psychosocial subscale assessing emotional, social, and school functioning.²¹ The PedsQL acute form assesses function in the past 7 days, and the standard form assesses function in the past month. For the purposes of this study, participants were asked to respond to questions on the basis of the time frame since hospital admission, as has been previously described in the inpatient setting.⁵ Participants report frequency of difficulty experienced with functioning on a 5-point Likert scale with anchors 0

indicating “never” and 4 indicating “almost always a problem.” Items are reverse scored and transformed to a 0 to 100 point range. Items are averaged to produce total and subscale scores such that higher scores indicate better health-related quality of life. This measure has shown good validity in pediatric populations.^{20,21}

Statistical Approach

Analyses were conducted using SPSS version 19.0 (IBM Corp, Armonk, NY). The psychometric properties of individual items were first assessed. The means and SDs of items were considered, as well as interitem correlations, corrected item correlations, and visual and statistical assessment of item distributions. Item 10 of the YAPFAQ, “do homework or schoolwork,” had poor psychometric properties, with a significant positive skew (skew = .58) driven by disproportionately frequent “0” responses, likely reflecting that this item was not relevant to the inpatient postsurgical setting. This item was therefore removed from all subsequent psychometric analyses.

Analysis of variance (ANOVA) was used to test differences according to race; Pearson correlation coefficient was computed to assess differences according to age; and χ^2 analysis to assess differences according to sex. To assess psychometrics of the YAPFAQ in the postsurgical sample, we conducted exploratory factor analysis (EFA), and assessed reliability and validity in study 1. We conducted EFA with iterated principal component extraction method and applied varimax rotation, replicating the measure’s original validation.²² Items were assigned to the factor with the highest factor loadings. Assignments were reviewed and compared with the original measure factor structure. Reliability was assessed using Cronbach α . Convergent validity was assessed with Pearson correlations between the YAPFAQ total score and the PedsQL physical health subscale score and numerical pain ratings.

In study 2, to assess responsiveness of the YAPFAQ to expected daily recovery, we first conducted a repeated measures ANOVA to determine whether there was a significant effect of recovery time on YAPFAQ scores. We then calculated standardized response means by calculating $\text{Mean}_2 - \text{Mean}/\text{SD}_{\text{diff}}$ (SD_{diff} = Standard Deviation of score changes) to assess sensitivity to detect improvement in function over time.⁹

To achieve our aim of developing a YAPFAQ short form applicable to pediatric surgery, the full sample of study 1 was randomly divided into 2 groups: a primary development group for item level analysis and evaluation of possible configurations, and a test group for cross-validation of the proposed configuration. We examined descriptive statistics and distributions of individual items within the primary development group. Items with significant factor cross-loadings in EFA in the full sample were removed (8, 9, and 11). With the remaining items, we conducted interitem correlations and corrected item scale correlations against YAPFAQ total score and subscale scores.⁶ To incorporate the domains assessed in the primary measure, we aimed to retain at least 1 item from each domain in the short measure (dressing, washing, movement). We identified 1 item from each domain on the basis of the greatest correlation with their respective factor score. We reviewed all items for relevance to the postoperative setting. For example, ‘put on or change your shirt’ may be less relevant to postoperative patients wearing a hospital gown. In all cases the item with the

highest correlation to factor scores was also the item identified as most relevant to the setting. Identified items were then averaged for each factor, and linear regressions were conducted to determine the amount of variance of each full factor accounted for by the proposed short form items. The sum of the 3 items comprised the proposed YAPFAQ-3 total including 2 items from the activities of daily living factor (1 item representing dressing, and 1 item representing washing), and 1 item from the movement factor. Finally, a linear regression was conducted to assess the variance of the full YAPFAQ explained by the proposed YAPFAQ-3. The resulting YAPFAQ short form was cross-validated in the test sample, assessed for reliability and validity.

In study 1, 18 participants (3.2%) were excluded from analyses for missing >20% of YAPFAQ item responses, yielding a total of 564 participants included in analyses. Five participants did not complete PedsQL subscale scores and 7 did not complete numerical pain ratings; these participants were excluded pairwise from respective validity analyses. In study 2, 4 participants (7.5%) were missing >20% of YAPFAQ item responses for at least 1 day of assessment, and 9 participants did not complete the questionnaire on 1 of the 3 days of assessment. These participants were excluded from ANOVA analyses and respective effect size analyses. After exclusions, <1% of remaining data were missing; thus, the participant's mean for all other responses was used for missing responses.

Results

Participant characteristics are presented in Table 1. Study 1 included 194 children age 8 to 11 years, 168 children age 12 to 14 years, and 202 children age 15 to 18 years. Most participants in study 1 underwent general ($n = 221$, 39.2%) or orthopedic ($n = 173$, 30.7%) surgeries; the remainder included ear, nose and throat, plastic, oral and maxillofacial, urological, neurosurgical, and cardiac procedures. Most children in study 1 (53.2%) had no underlying chronic condition, whereas 30.3% had a noncomplex chronic condition, and 16.5% had a complex chronic condition. Study 2 included 30 children age 10 to 14 years, and 23 children age 15 to 18 years. Children in study 2 underwent major spine ($n = 36$, 68%), hip ($n = 2$, 4%), or pectus ($n = 15$, 28%) surgeries.

Psychometric Properties of the YAPFAQ for Assessing Pain-Related Function in a Pediatric Surgical Population

YAPFAQ scores (mean = 19.94, SD = 12.44, range = 0–44) in study 1 did not differ according to age ($r = .02$, $P = .53$), race ($F_{4,559} = 1.68$, $P = .15$), or sex ($\chi^2 = 85.81$, $P = .16$).

EFA

We conducted EFA using data from participants in study 1. EFA with varimax rotation yielded 1 factor, on the basis of eigenvalues >1. However, because of the 2-factor model presented in the original validation,²² a 2-factor model was forced. All items loaded to the same factors as in the original validation, however there was significant cross loading of 3 items (8, 9, and 11); see Table 2 for a full report of items and factor loadings. The first factor comprised activities of daily living ($n = 7$ items), accounting for 70.79% of the variance; the second comprised movement/mobility items ($n = 4$), accounting for 6.45% of the variance,

together accounting for 77.24% of the variance. On the basis of interpretability and consistency with the YAPFAQ's original report, the 2-factor solution was deemed final.

Reliability—We assessed reliability of the YAPFAQ in the participants from study 1. Internal consistency assessed using Cronbach α for the total YAPFAQ score was excellent at $\alpha = .96$; for the activities of daily living factor, $\alpha = .94$; and for movement, $\alpha = .92$.

Validity—We assessed validity of the YAPFAQ by examining correlations between the YAPFAQ total score and the PedsQL physical health subscale score and numerical pain ratings in participants from study 1. The YAPFAQ showed good construct validity. As hypothesized, higher YAPFAQ scores (ie, greater perceived difficulty of functioning) were correlated with lower physical health (PedsQL physical health subscale score; $r = -.53$, $P < .001$) and higher pain intensity ratings ($r = .42$, $P < .001$).

Responsiveness—We assessed responsiveness of the YAPFAQ to expected daily recovery during hospitalization, in study 2. YAPFAQ scores decreased significantly over time, reflecting expected improvement in function, $F_{2,64} = 26.05$, $P < .001$. Standardized response means indicated responsiveness to expected daily recovery in function after surgery; means, standard error, and standardized response means are presented in Table 3.

Proposed YAPFAQ Short Form

Alternative configurations of YAPFAQ items were considered to generate a short form to facilitate wider use and clinical utility of the measure in the hospital setting, using data from study 1. Item-level analysis was conducted in the primary development group of study 1; descriptive statistics for YAPFAQ items are presented in Table 4. As reported previously, items 8, 9, and 11 had significant cross-loadings and were excluded from the shortened measure. Remaining items from activities of daily living as well as movement subscales were chosen on the basis of correlations with the respective factor scores and relevance to the hospital setting. Item-scale correlations are presented in Table 5. Within the 2 domains represented by the activities of daily living factor, item 2 ("Put on or change your hospital gown or clothes") and item 3 ("Wash your body") were most strongly correlated with the activities of daily living score ($r = .91$, $P < .001$ and $r = .92$, $P < .001$, respectively). Together these 2 items significantly predicted the full measure activities of daily living score ($B = .95$, $t_{270} = 49.91$, $P < .001$) and explained a significant portion of its variance ($R^2 = .90$, $F_{1,270} = 2,490.31$, $P < .001$). Within the movement/mobility factor, item 7 ("Go outside your room") was most strongly correlated with total movement score ($r = .93$, $P < .001$). This item significantly predicted total factor score ($B = .93$, $t_{270} = 41.60$, $P < .001$) and explained a significant portion of its variance ($R^2 = .87$, $F_{1,270} = 1,730.31$, $P < .001$). These 3 items were combined to form a YAPFAQ 3-item short form total score (YAPFAQ-3, Supplementary Appendix 1). YAPFAQ-3 significantly predicted YAPFAQ total ($B = .96$, $t_{270} = 56.65$, $P < .001$) and explained 92% of the variance ($R^2 = .92$, $F_{1,270} = 3,208.80$, $P < .001$). Cross-validation of the proposed configuration was assessed in the test group of study 1. Reliability and validity of the YAPFAQ-3 score were assessed. Cronbach α was good at $\alpha = .86$. YAPFAQ-3 showed good convergent validity with the PedsQL physical health subscale score ($r = -.48$, $P < .001$), and numerical pain ratings ($r = .43$, $P < .001$).

Discussion

This report presents an adapted measure to assess daily functioning in children hospitalized after surgical procedures. The YAPFAQ showed good reliability, validity, and responsiveness in pediatric postsurgical samples. A proposed short form version of the YAPFAQ consisting of 3 items showed promising psychometric properties comparable with the full version.

The YAPFAQ was developed to assess acute pain-related functional ability, and was originally validated in children admitted for acute pain related to sickle cell disease. We extend the use of the YAPFAQ to monitor functional ability in children admitted for acute recovery after surgery, finding good reliability and good convergent validity with pain intensity and with physical function on the PedsQL in our sample. Convergence with pain intensity was greater in our surgery sample compared with the original validation in a sickle cell disease sample, reflecting that pain may be more strongly related to function in the context of acute postsurgical pain than in the context of acute or chronic pain associated with sickle cell disease.

A 2-factor model in our postsurgical sample yielded a configuration similar to the original YAPFAQ validation. The activities of daily living factor accounted for a greater proportion of variance in total functional ability scores (70.79%), whereas movement items accounted for less of the variance (6.45%), reflecting the greater effect of surgery on function related to self-care than on movement. In the original validation in patients with sickle cell pain the activities of daily living factor accounted for 40.67% of variance, and the movement factor accounted for 24.30% of the variance. Together, factors representing movement and activities of daily living accounted for a greater proportion of variance (77.24%) than in the original sickle cell validation sample (65%). This is not surprising because most of our sample was without chronic illness, and thus the direct effect of acute pain on their functional ability may have been more directly assessed by the YAPFAQ.

We further extend the original validation of the YAPFAQ by assessing responsiveness to expected acute functional improvement, showing detectable improvement in functioning over the first 3 postoperative days. Research has identified a significant portion of children who struggle with pain and recovery at home after hospital discharge, which can persist, affecting long-term health-related quality of life. Evaluation of functioning in the acute postsurgical period may identify children experiencing poorer functional recovery in the hospital to enable early intervention to prevent poorer postsurgical outcomes. Future research is needed to examine whether patterns of acute function in the hospital predict functional outcomes at home.

Following the recommendation of the Joint Commission on Accreditation of Health Care Organizations in 2000,¹⁵ regular assessment of pain intensity is standardized in most hospital settings.¹ However, as highlighted by the Pediatric Division of the Initiative on Methods, Measurement, and Pain Assessment in Clinical Trials group, it is critically important to assess physical function along with pain intensity to understand the severity and effect¹⁰ of acute pain, and to inform treatment decisions. As proposed, a brief form of the YAPFAQ could improve the clinical utility of the measure, making it more feasible to

integrate into daily clinical assessments in the hospital after surgery, and decrease the burden of self-report on children who are ill after surgery. The high Cronbach α of the full measure suggests redundancy among the original items, further supporting development of a short form. The proposed short form, the YAPFAQ-3, consisting of 3 items showed promising psychometric properties comparable with the full version.

A strength of our study was use of a large clinical sample of children, hospitalized for a range of surgeries, which enabled us to split the sample into a primary development group and a test group to develop and test a new short form. A further strength of the study included obtaining daily assessments in a sample of children admitted after major surgery, which enabled examination of measure responsiveness to expected recovery after major surgery. A limitation of the present study was that although self-report may decrease the burden of measure administration, some patients may be too sick initially to complete the measure. However, we were able to obtain self-report in a large cohort of postsurgical inpatients, and most children in our major surgery cohort were also able to complete self-report on the full 12-item measure. The proposed short form may further reduce patient burden. Although this measure was designed for self-report, future research could examine the validity of nurse or parent proxy-report when youth are too sick to self-report. A further limitation of the study is that functional ability may be affected by factors other than pain, which we did not assess in our study; for example, medical equipment such as casts or drains, or side effects from medication, may affect acute functional ability. These factors should be assessed in future studies. Further, investigators may want to include the phrase 'because of pain' in the stem of the measure in future validation studies, to ensure that they are assessing function specifically related to pain.

Conclusions

The YAPFAQ showed good psychometric properties in an inpatient postsurgery sample, showing good convergent validity, and responsiveness to expected functional improvement during hospitalization. Assessment of functional ability alongside pain intensity during acute recovery in the hospital will not only allow multidimensional assessment of pain severity, but could identify children experiencing early problems with recovery and permit early intervention to prevent persistence of postsurgical problems at home.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Perspective

The YAPFAQ showed promising psychometric properties in a pediatric postsurgical population. This study addresses a gap in tools available to monitor functional recovery during hospitalization after pediatric surgery. Early detection of problems with recovery may enable targeted therapies to improve postsurgical outcomes.

Table 1

Sample Characteristics

	Study 1 (n = 564)		Study 2 (n = 53)	
	n	%	n	%
Sex				
Female	284	50.4	34	64.2
Male	280	49.6	19	35.8
Race and ethnicity				
Caucasian	317	56.2	40	75.5
African American	15	2.7	4	7.5
Hispanic	108	19.1	3	5.7
Asian	31	5.5	2	3.8
Mixed race or other	93	16.5	1	1.9
Not reported	0	0	3	5.7
Parental education level				
High school or less	152	27	8	15.1
Some college	174	30.9	13	24.5
Bachelor's Degree or higher	234	41.5	30	56.6
Not reported	4	.7	2	3.8

Table 2

YAPFAQ Item Factor Loadings From EFA in Study 1

YAPFAQ Item	Factor 1	Factor 2
1. Take a bath or shower?	.771 *	.436
2. Put on or change your hospital gown or clothes?	.754 *	.489
3. Wash your body?	.797 *	.432
4. Get up from the bed?	.402	.807 †
5. Walk around in the room?	.318	.883 †
6. Wash or shampoo your hair?	.805 *	.337
7. Go outside your room?	.413	.811 †
8. Be up without needing to rest?	.515	.643 †
9. Put on or change pants?	.630 *	.628
11. Turn over or roll over in bed?	.546 *	.532
12. Put on or change your shirt?	.805 *	.311

NOTE. Factor 1 = activities of daily living; factor 2 = movement.

* Items included in factor 1.

† Items included in factor 2.

Table 3

YAPFAQ Change Scores and Standardized Response Means Over First 3 Postoperative Days in Study 2

YAPFAQ Change	Mean	Standard Error	SRM
Day 1 to day 2	4.03	6.69	.60
Day 2 to day 3	5.06	6.80	.74
Day 1 to day 3	8.68	7.73	1.23

Abbreviation: SRM, standardized response mean.

NOTE. YAPFAQ range = 0 to 48. Higher change scores indicate greater improvement in function.

Table 4

Descriptive Statistics for YAPFAQ Items in the Primary Development Group of Study 1

Item	Mean	SD	Skewness	Skewness z-Score
1. Take a bath or shower?	1.93	1.42	.00	-.01
2. Put on or change your hospital gown or clothes?	1.64	1.28	.30	2.05*
3. Wash your body?	1.75	1.34	.16	1.07
4. Get up from the bed?	1.68	1.25	.38	2.57*
5. Walk around in the room?	1.70	1.37	.31	2.11*
6. Wash or shampoo your hair?	1.53	1.44	.44	3.00*
7. Go outside your room?	1.59	1.37	.39	2.62*
8. Be up without needing to rest?	1.76	1.37	.28	1.91
9. Put on or change pants?	1.86	1.46	.10	.69
11. Turn over or roll over in bed?	2.01	1.42	-.07	-.49
12. Put on or change your shirt?	1.51	1.40	.46	3.11*

NOTE. YAPFAQ range = 0 to 48.

*
z > 1.96.

Table 5

Item Scale Correlations of Relevant Items Used to Determine Final Items for Inclusion in YAPFAQ 3-Item Short Form (Study 2)

Item	Activities of Daily Living Total	Movement Total
1. Take a bath or shower?	.89	
2. Put on or change your hospital gown or clothes?	.91	
3. Wash your body?	.92	
4. Get up from the bed?		.90
5. Walk around in the room?		.92
6. Wash or shampoo your hair?	.85	
7. Go outside your room?		.93
12. Put on or change your shirt?	.84	