CHILD LIFE SPECIALIST-PATIENT RELATIONSHIPS: EXPLORING THE POTENTIAL FOR MEASURING RELATIONSHIP QUALITY

by

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A thesis submitted to the Graduate Council of
Texas State University in partial fulfillment
of the requirements for the degree of
Master of Science
with a Major in Human Development and Family Sciences – Child Life
May 2022

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ACKNOWLEDGEMENTS

Foremost, I would like to acknowledge and express my deep and sincere gratitude to my thesis chair and mentor, Dr. Priscilla Goble. Her research inspired this study and her wealth of knowledge served as an invaluable resource throughout this process. I am grateful for the care, guidance, and support she has provided throughout my academic career which has shaped the student and person I am today. Additionally, I would like to thank my committee members, Dr. Farya Phillips and Dr. Yishan Shen for sharing their knowledge and challenging me to grow throughout this process. The unwavering support and encouragement of my committee from the beginning has made this project possible. Thank you to Mrs. Vickie Squires for imparting her expertise for use in this project and for the continual support of my academic and career goals. Thank you to my family without whom, none of this would be possible. Special thank you to my mother, Stacy Wilganowski for her sacrifices and boundless love and support throughout my entire life which has led me to accomplish things beyond my dreams. I would also like to thank the friends I have made along the way who have seen and supported me through this process and whose drive and passion inspire me. Finally, thank you to my partner, Westin McMakin, for believing in me when I needed it most and for his immeasurable love, support, and continued encouragement throughout this process and every day.

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I. INTRODUCTION

Hospitalization has the potential to be a negative, stressful, and even traumatic event for children (Le Brocque et al., 2009; Melnyk, 2000). Certified child life specialists (CCLS) seek to reduce the adverse impacts of hospitalization through evidence-based practices such as play, diagnosis education, and procedural preparation and support (ACLP, 2019). Child life programs have consistent positive outcomes for patients such as reduced hospital stays, lower levels of emotional distress, and higher levels of coping effectiveness (Grissom et al., 2016; Wolfer, et al., 1988). These outcomes can likely be attributed to the relationship CCLS build with their patients. For example, we know from research on patient relationships with healthcare providers such as doctors and nurses that clinician-patient relationships have been shown to be related to patient outcomes (Kelley et al., 2014; Ramos, 1992). In fact, a qualitative study found that pediatric nurse-patient relationships helped children cope with procedures throughout hospitalization (Bombi et al., 2007; Rollins, 2005). Pediatric oncology patients reported that connected relationships were the single most important thing to help them cope (Rollins, 2009). Within Child Life, however, there are no existing measures of the CCLS-patient relationship. When surveyed, CCLS have emphasized the importance of building rapport and developing a relationship with patients and families (Cole et al., 2001; Turner & Fralic, 2009). Koller (2008) conducted a systematic review in which she noted the importance of forming trusting relationships for effective psychological preparation in patients. It is apparent that the Association of Child Life Professionals (ACLP) and CCLS have placed significant emphasis on the relationships they have with patients (ACLP, 2001), though the quality and characteristics of these relationships have not been

thoroughly explored in the literature. This study sought to explore two possible measures of CCLS-patient relationship quality.

History of Child Life

The origins of Child Life date back to the 1920s, when the first play programs were introduced in pediatric hospitals in an attempt to engage children through play and support them through their hospital experience (ACLP, n.d.; Pond Wojtasik & White, 2018). Approximately a decade later, these programs spread across the U.S. and Canada with there being at least 9 existing programs by 1936. Child Life programs grew in popularity in tandem with the growing field of developmental science in the 1950s. Theories set forth by Freud, Bowlby, Piaget, and Erikson continue to be the foundation for Child Life today (Pond Wojtasik & White, 2018).

A student of Maria Montessori and Anna Freud, Emma Plank established child life programming as we know it today with her 1962 publication *Working with Children in Hospitals* (ACLP, n.d.; Plank, 1962; Pond Wojtasik & White, 2018). Her publication explored children's reactions to hospitalization and created guidelines for Child Life programs (Pond Wojtasik & White, 2018). A committee of 40 professionals who worked in play related fields, including Plank, met in 1965. From this conference, the Association for the Care of Children in Hospitals (ACCH) was born (ACLP, n.d.; Pond Wojtasik. 2018). The ACCH was established in 1966 with the goal of supporting children throughout hospitalization and consisted of parents and pediatric healthcare professionals from a variety of fields. The ACCH and the field of child life grew rapidly and in 1982 Child Life Specialists formed their own independent organization: the Child Life Council (CLC), which is known today as the Association for Child Life Professionals (ACLP).

The CLC funded research to inform evidence-based practices and establish the efficacy of child life programs, certification requirements and exams were put into place, and many of the positions and standards as we know them today were created. Presently there are thousands of ACLP members and over 400 Child Life programs in the U.S. (ACLP, n.d.). CCLS today remain committed to reducing the negative impacts of hospitalization and promoting normative development through the use of evidence-based practices and therapeutic interventions.

Efficacy of Child Life Programs

CCLS provide targeted interventions to support children throughout stressful healthcare experiences. These interventions include procedural preparation and support, diagnosis education, provision of coping mechanisms, healthcare play interventions and normalization opportunities, parent and sibling support, and bereavement services (DeMichelis et al., 2017). Children who receive interventions provided by CCLS have less anxiety, pain, and more positive coping mechanisms (Drayton et al., 2019; Hyland et al., 2015; Wolfer et al., 1988). For example, in a double-blind study conducted by Brewer et al. (2006), children who received procedural preparation from a CCLS experienced slightly lower levels of post-operative anxiety compared to their pre-operative scores while children who did not receive preparation had significantly higher post-operative anxiety scores. Furthermore, patients under the care of CCLS experience shorter hospital stays and reduced need for sedation and analgesics (Romito et al., 2020; Törnqvist et al., 2015). Accordingly, Child Life services not only support patient well-being but also result in decreased expenses for both patients and the hospital. Importantly, Child Life services are well received by patients and families. When surveyed, between 90-100% of

parents expressed satisfaction with the child life interventions provided throughout their hospital stay (LeBlanc et al., 2014; Tyson et al., 2014).

CCLS-patient Relationships

There are four primary types of relationships associated with CCLS: professional, clinical, supportive, and therapeutic (McCue, 2018). Professional relationships are simply characterized by the relationship an individual in a particular profession shares with another individual such as a patient, client, coworker, etc. (McCue, 2018). These relationships must adhere to any code of ethics or professional standards outlined by the relevant profession. In Child Life some of these ethical guidelines include commitment to psychosocial care, maintaining objectivity and integrity, remaining respectful of diversity in patients and communities, and the conclusion of a professional relationship before a personal one is formed (ACLP, 2020). A professional relationship can either be clinical or non-clinical (McCue, 2018). Clinical relationships are formed with patients and families while non-clinical relationships are formed with coworkers and other professional colleagues. Child Life embodies both aspects of a professional relationship. CCLS are not only responsible for building relationships with patients and families, but also with the multidisciplinary healthcare team.

Child Life relationships are also often supportive and therapeutic. These can exist as mutually exclusive components of a relationship, but the CCLS-patient relationship typically benefits from a combination of the two (McCue, 2018). Aspects of a supportive CCLS-patient relationship include warmth and emotional support provided to patients and families. Therapeutic relationships are those focused on healing (McCue, 2018). As CCLS serve to support children and families as they cope with the experience of

hospitalization, they also aim to promote healing by providing appropriate interventions. Each of these four aspects of the CCLS-patient relationship are critical for providing effective patient and family centered care.

The ACLP defines the nature of the relationship a CCLS shares with their patient as "built on trust, respect and professional competence which contribute to the development of confidence, resilience, and problem-solving skills that enable individuals and families to deal effectively with challenges to development, health and well-being" (ACLP, 2001; pp. 1). This definition and other resources published by the ACLP, such as the code of ethics, serve as a guide to defining the CCLS-patient relationship. The standards set by the ACLP are upheld by the ACLP rather than legal standards as is the case in other healthcare professions. If CCLS violate the code of ethics repercussions will be determined by the ACLP and may include being stripped of their certification and barred from recertification. Relational skills are most often gained and refined via experience in the field during volunteering, practicums, and internships.

Field-based learning is a common technique that can effectively teach students how to interact with their patients via demonstration. Similar techniques are employed in fields such as teaching and counseling (Rovegno, 1992; Urbani et al., 2002). Unlike the field of Child Life, researchers in these other fields have developed measures that quantify the quality of the relationship the professional has with their students/clients and can therefore align professional development to promote positive relationships and outcomes for their students/clients. Similar work is needed in the field of Child Life.

Measurement of Adult-Child Relationships

Previous research has demonstrated that children's outcomes can be influenced by the quality of the relationships they have with adults throughout their childhood. This research includes, but is not limited to, their relationship with their parents, teachers, and therapists (Birch & Ladd, 1997, Shirk & Karver, 2003). The effects the CCLS-patient relationship has on patient outcomes has not been thoroughly explored in the literature. Given the extensive literature in other fields, it would be reasonable to expect that the quality of the relationship a CCLS has with their patients is also related to psychological, physical, and emotional outcomes during hospitalization and possibly long term.

The parent-child relationship is arguably the most important relationship for children. For example, researchers consistently show that higher quality parent-child relationships are associated with positive behavioral, social, and emotional outcomes of children (Hong et al., 2018; Nievar et al., 2014; Pianta et al., 1997). Even within the hospital setting, the quality of the relationship pediatric oncology patients have with their parents is related to their psychosocial wellbeing post treatment including posttraumatic stress symptoms, internalizing of emotions, and social functioning (Tillery et al., 2019). CCLS work not only with patients, but directly with families as well. The practice of family-centered care in Child Life affects parents stress and anxiety levels which likely affects the quality of parent-child relationship (Brewer, 2006). It is necessary to understand the affect parent-child relationships have on hospitalization while still recognizing the role that other adult-child relationships may have within the healthcare settings.

The relationship between children and non-parent adults are also important factors in childhood outcomes. For example, teachers play an instrumental role in their students development. Utilizing the Student Teacher Relationship Scale (STRS), the quality of student-teacher relationships has consistently been linked to children's social, emotional, and academic development (Birch & Ladd, 1997; Garner & Waajid, 2008;Hamre & Pianta, 2001). Similarly, for children in therapy, the therapist-client relationships can influence the child's development. Kazdin and Whitley (2005) found that positive child-therapist alliances were associated with greater therapeutic changes and fewer barriers in treatment. This alliance, as the therapist-client relationship is commonly referred to, between a therapist and their client is moderately but consistently associated with positive treatment outcomes (Shirk & Karver, 2003). The relations between and treatment outcomes for children in individual therapy is consistent with that of therapist-adult client alliance (Shirk & Karver, 2003). Scales have been developed to evaluate these therapist-client relationships and have shown to promote desired outcomes (Elvins & Green, 2008; Green, 2006; Priebe & McCabe, 2006).

Though the importance of therapeutic relationships is stressed in Child Life, no evaluative measure exists to understand and systematically define a high vs. low-quality relationship. Even in other aspects of healthcare settings, clinicians stress the importance of building a relationship with pediatric patients and their families as a component of the preventative well-child care practices (Tanner et al., 2009). Nevertheless, a standardized self-report measure does not exist to measure these types of adult-child relationships within medical settings. The current study aims to address this gap by adapting existing scales measuring adult-child relationships to be used for the CCLS-patient relationship.

Two measures from other disciplines were selected for use in this study: The Student Teacher Relationship Scale (STRS) and the Agnew Relationship Measure (ARM).

The STRS is a widely validated tool used to measure the teacher's perceived conflict, closeness, and dependency with their student (Pianta, 2001). The STRS has been shown to reliably predict outcomes related to academics and social and emotional development. The STRS consists of three subscales: closeness, conflict, and dependency. A close teacher-child relationship is characterized by warmth, support, and openness. Close relationships are positively related to high quality teacher-child relationships. Conflictual relationships consist of the frustration and difficulties teachers perceive they experience with a particular child. Dependency describes relationships in which the teacher perceives the child as being overly reliant on the teacher. Conflict and dependency are negatively related to the quality of teacher-child relationships (Pianta, 2001).

The ARM is a validated measure used to evaluate therapist-patient relationships (Agnew-Davies, et al., 1998). The tool was developed to be completed by both adult patients and their therapist to determine the quality of their bond, partnership, confidence, openness, and client initiative. Bond consists of provision of support and understanding from the therapist. Partnership is characterized as the effort in care shared by the therapist and their client. Within the original measure, bond and partnership are highly related. Confidence in the therapist self-report component describes the therapists' perspective of the clients confidence in the therapists' skill and competency. Openness is characterized by the therapists perception of the clients ability to express their thoughts and concerns without restraint. Finally, client initiative is the therapists' perception of the client taking

the lead in their care. Each of the subscales is positively related to the quality of the therapist-client alliance (Agnew-Davies, et al., 1998). For the purpose of this study only the therapist self-report component of the measure was utilized.

Given that the current study is the first to explore potential measures of the CCLS-patient relationship, another aim was to explore which measure CCLS find most applicable. Thus, in addition to the STRS and ARM, CCLS were asked to rate each individual item on a 5-point Likert scale from “does not apply at all” to “definitely applies.” The responses gathered from this measure provide insight as to which items CCLS found to be most appropriate for evaluating the relationship they have with their patients

II. PRESENT STUDY

The goal of the present study was to identify a measure that can accurately assess the quality of the relationship between a child life specialist and their patient. This goal was achieved through a three-step process. First, I identified and adapted the measures with the assistance of two CCLS, corresponding with both until a consensus had been reached for all of the items. I then created and distributed a digital survey to CCLS. The survey included both adapted measures, demographic questions, and opportunities to provide personal feedback regarding the measures. Finally, once data collection was complete, analyses were run to answer the following research questions.

Two research questions were explored. First, which scale do CCLS perceive to be more applicable to their career? Based on the therapeutic relationship a CCLS shares with their patient, I predicted that CCLS would report that the ARM was a more applicable measure over the STRS. Second, how will the factor structure of the measures completed by the CCLS compare to the factor structure of the original measures and to the demographic characteristics of the CCLS and patients. The STRS and ARM scales that have been adapted for this study have three and five existing subscales, respectively. When analyzing the items from the STRS, I expected the factors will be the same as the existing subscales- closeness, conflict, and dependency. For the ARM items I expected there will be more overlap between each of the factors and therefore fewer factors than the five existing subscales- bond, partnership, confidence, openness, and client initiative. Due to the fact that the ARM is primarily used with adults, and the scales are already closely related, the partnership that is characteristic of therapist-client relationships may more closely resemble bond with this population. The subscale of client initiative may

also look different due to the unique application of the scale. For example, we do not expect pediatric patients to take the same initiative with their care as adult patients do, therefore the items that comprise client initiative may be absorbed by one or more of the other existing subscales.

Despite these predictions, the items were included in the measure because the adapted items were perceived to still be applicable. Though designed for adults, the ARM was selected on the criteria that (1) it is a therapist self-report measure, (2) there is no required child and/or parental component that is necessary for data analysis, and (3) there is no developmental age restriction once items were adapted appropriately, allowing for use with a wider population of CCLS. In addition, when reviewed by both myself and 2 CCLS it was perceived to contain several items appropriate for measuring the CCLS-patient relationship. Adapting adult alliance measures for use with child populations has previously been done in other studies, though not specifically with the ARM (Elvins & Green, 2008).

III. METHODS

Participants

Certified child life specialists (CCLS) were recruited to complete the self-report survey for this study. CCLS were recruited via social media, word of mouth, and emailing child life departments at various hospitals. Compensation was not provided to respondents. Everitt (1975) recommends a sample size of 10 respondents per variable when conducting Confirmatory Factor Analysis (CFA). Each measure used in the study contains 28 items. Accordingly, the target sample size was 280 CCLS. After 7 months of recruitment, 208 CCLS initiated the survey; 131 responses were not included in analyses due to significant patterns of missing data considered to be Not Missing At Random (NMAR). For example, the most common pattern of missing data was from participants who initiated but did not complete the survey, leaving entire sections of 10+ items of one of the relationship measures blank. Participants with some fewer than 10 missing items distributed throughout the survey, rather than a whole section, were included in analyses. The reduced sample consists of 66 complete and 11 partially complete responses from CCLS.

As shown in Tables 1 and 2, preliminary analyses revealed that respondents were primarily White (n = 74, 96.10%), non-Hispanic (n = 66, 85.70%), females (n = 73, 94.80%), with master's degrees (n = 54, 70.10%). The CCLS were on average 34.79 years old (SD = 9.88, range = 24-58) with 8.58 years of work experience (SD = 8.26, range = 0.17-34.83). Socioeconomic status (SES) was reported using a subjective SES scale (Adler et al., 2000). Respondents rated themselves at a 6.19 on average (SD = 1.19, range = 3-9). The missingness of the data was assessed in order to compare the

characteristics of the sample to those who did not finish the survey. Analyses determined that those with missing data were characteristically very similar to those who were included in the sample. These non-selected participants were primarily White (*n* = 115, 97.50%), non-Hispanic (*n* = 111, 94.10%), females (*n* = 117, 99.20%), with master's degrees (*n* = 77, 65.3%). The non-selected participants were on average 30.67 years old (*SD* = 7.068, range = 23-56) with 5.86 years of work experience (*SD* = 6.07, range = .17-32.00).

Each CCLS reported the demographic characteristics of a patient of their choosing. Of these patients, 50.60% were female (*n* = 39). Majority of patients were White (*n* = 46, 59.70%) and non-Hispanic (*n* = 52, 67.50%). Majority of patients were seen in inpatient settings, (*n* = 39, 50.60%), 27 were seen in outpatient settings (35.10%), and 11 did not fall within either category (14.30%). On average, patients had been under the CCLS care for 12.22 months (SD = 23.35, range = .01-168) and had spent 74.97 hours with the CCLS (SD = 177.10, range = 1-1344).

Procedures

A digital survey was created and distributed to child life specialists. The self-report survey asked the child life specialists to think of a patient with whom they have built a relationship within the past three months, preferably one that they have worked with for at least one month. The CCLS answered demographic questions about themselves, their career, and patient characteristics. Once the preliminary information was collected, the CCLS filled out two measures used to gauge the quality of their relationship with their patient. In addition, they were asked to rate each item from the relationship measures based on how appropriate they believed it to be for measuring

CCLS-patient relationships. In total the questionnaire consisted of 112 items (56 items measuring relationship, 56 items measuring item-level appropriateness) in addition to the aforementioned demographic questions which will be considered as controls when analyzing the data. This project (7831) was approved by the Texas Sate IRB on June 23, 2021.

Measures

Preliminary Data

Participants were screened by answering the question "are you a certified child life specialist." They then answered demographic questions about themselves (e.g., age, gender, race, and ethnicity), questions about their career (e.g., how long they've been practicing and what department they work in), and questions about their patient characteristics (e.g., age, race, ethnicity, gender, and whether the patient was admitted for inpatient or outpatient services). Education level was collected by asking CCLS to report their highest level of education. The scale ranged from "some high school" to "Ph.D. or higher" though it should be noted that a bachelor's degree is required to be a CCLS at this time so respondents who had not yet achieved the required education level would not have been included in analyses. The SES scale asks respondents to think of a ladder with 10 rungs as representing where people stand in the United States including education, jobs, and finances. Respondents are asked to identify where they fall on the ladder. Those higher up on the ladder would be considered to have a higher SES while those lower on the ladder would have a lower SES (Adler et al., 2000). They were then asked to estimate in days or months how long this patient has been in their care and to estimate in hours how much time they have spent with this patient one-on-one or in groups.

Student Teacher Relationship Scale (STRS)

The STRS is a widely validated tool used to measure the teacher's perceived conflict, closeness, and dependency with their student(s) (Pianta, 2001). The STRS is scored using a 5-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree." The 28-item tool consists of three subscales: closeness, conflict, and dependency. The closeness scale consists of items such as "I share an affectionate, warm relationship with this child." The conflict scale consists of items such as "This child and I always seem to be struggling with each other." The dependency scale consists of items such as "This child appears hurt or embarrassed when I correct him/her." This scale has demonstrated adequate levels of reliability. Overall, the STRS has an internal consistency of .89, the closeness subscale has an internal consistency of .86, conflict has an internal consistency of .92, and dependency has an internal consistency of .64 when used with children in preschool through 3rd grade (Pianta, 2001).

For the purpose of the proposed study, the STRS was adapted in the following ways. The scoring of the scale was adapted to a 7-point scale ranging from "strongly disagree" to "strongly agree" in order to establish consistency across measures in this study. Item 1 was changed from "I share an affectionate, warm relationship with this child" to "I share a warm, professional relationship with this child." Item 16 has been changed from "this child sees me as a source of punishment and criticism" to "This child sees me as a source of pain and/or punishment." Item 18 has been changed from "This child remains angry or is resistant after being disciplined" to "This child remains angry or is resistant after receiving treatment." All of these changes were made to ensure that the items could be applied to the CCLS-patient relationship.

Agnew Relationship Measure (ARM)

The ARM is a validated tool used to evaluate therapist-patient relationships (Agnew-Davies, et al., 1998). The tool was developed to be completed by both adult patients and their therapist to determine the quality of their relationship. For the purpose of this study only the therapist self-report component of the measure will be utilized. The 28-item scale consists of a 7-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree." Each of the five subscales characterizes a prominent aspect of the therapist-client relationship. Bond consists of items such as "My patient feels free to express the things that worry him/her." Partnership consists of items such as "My patient and I are willing to work hard together." Confidence consists of items such as "I feel confident in myself and my techniques." Openness consists of items such as "My patient feels that she/he can openly express her/his thoughts and feelings to me." Client initiative consists of items such as "My patient takes the lead when she/he is with me." A previous study conducted a principal component analysis and revealed five subscales which researchers categorized as bond (α= .85), partnership (α= .81), confidence (α= .86), openness (α= .86), and client initiative (α= .55) (Agnew-Davies, et al., 1998).

The following changes were made to the items. The word "client" has been changed to "patient" across all items in order to remain consistent with typical CCLS verbiage. Items 18 and 28 were removed because they were not included in scoring in the original scale. Item 22 "I feel bored or impatient with my patient" was separated into two separate questions (e.g., "I feel bored…" and "I feel impatient…") in order to account for the possibility that one of these apply but not the other. Item 24 was changed from "My patient and I are willing to work hard together" to "My patient and I work together to

achieve the goals we have set." This change was made because it was felt that there was potentially a large amount of variability in the way "working hard" could be perceived. Item 25 was changed from "My patient takes the lead, and I expect it of her/him" to "I encourage my patient to take the lead." Because this scale has been adapted from use with adults to children for the purpose of this study, it may not always be appropriate to expect children to take the lead in their coping in the same way it is for adults in therapy. Item 27 was changed from "My patient and I have difficulty working jointly as a partnership" to "I have experienced pushback and/or conflict when working with this patient." Again, this change was made to reflect a more appropriate dynamic of adults working with children rather than other adults. Item 28 "My patient and I are clear about our roles and responsibilities when we meet" was removed because it is not typical for children to have responsibilities that need to be upheld related to child life. Though other items were hypothesized not to be very applicable, they ultimately were included based on the qualification that they do fall within the broad scope of Child Life.

Rating Appropriateness of Each Scale

The final measure was a 5-point Likert scale which was used to gauge which items CCLS find to be most applicable to their relationships with the children in their care. The scale ranged from "definitely does not apply" to "definitely applies." Due to the fact that this scale was developed specifically for this study, there is no prior literature to demonstrate its validity. A mean rating of appropriateness for each measure was calculated.

IV. DATA ANALYSIS

Preliminary data analysis was conducted in SPSS version 27 (IBM Corp., Armonk, N.Y., USA) and consisted of descriptive statistics of the responses provided by participants. To examine the first research question, appropriateness ratings for STRS and ARMS were compared using a paired samples *t*-test in SPSS with an alpha of .05. The null hypothesis stated that the CCLS would rate both the STRS and ARM as equally appropriate. Correlations were run to examine relations between subscale items within the same measure and across measures.

To examine the second research question, the responses for each measure were examined using a confirmatory factor analysis (CFA) in Mplus version 7. All models were estimated using a Full Information Maximum Likelihood (FIML) estimator for the full sample ($N = 77$), addressing both missing and nonnormally distributed data. Specifically, for the ARM five factors were specified based on the original factor structure of bond, partnership, confidence, openness, and client initiative. For the STRS three factors were specified based on the original factor structure of closeness, conflict, and dependency. An additional CFA was run for the short form of the STRS using only the closeness and conflict factors from the original measure. To determine if the factor structure of the CCLS rated measure was consistent with the original measures, the following fit statistics and thresholds were used (Hooper et al., 2008; Kline, 2015): Model Chi-Square (X^2; $p > .05$), Comparative Fit Index (CFI $\geq .90$), Tucker Lewis Index (TLI $\geq .95$), Root Mean Square Error of Approximation (RMESA $< .08$), and Standardized Root Mean Square Residual (SRMR $< .08$). As follow-up analyses correlations examined relations between preexisting subscales (e.g., closeness, bond) to

shed light on construct validity across measures. Finally, to describe the nature of the findings relative to CCLS and patient characteristics, correlations, *t*-tests, and one-way ANOVAs were utilized to examine the preexisting subscales.

V. RESULTS

Preliminary analyses conducted using SPSS version 27 examined the descriptive statistics, skewness, and kurtosis of all study variables for the full sample (N = 77; Table 1). The majority of both STRS (64.29%) and ARM (62.96%) items were skewed and kurtotic. No transformations were needed for the non-normally distributed items because multivariate normality is not required when using the MLR estimator in Mplus (Muthén & Muthén, 1998–2012).

To answer the first research question, it was predicted that CCLS would report that the ARM is a more applicable measure compared to the STRS. A paired samples *t*-test was used to determine if the ratings of applicability were different for the STRS and ARM. The mean applicability score for the STRS was 3.48, and the mean applicability score for the ARM was 3.74. There was a statistically significant difference between the average applicability ratings for each scale, demonstrating support for the hypothesis ($t(76) = -5.89$, $p < .001$). The STRS and ARM were scored to better understand how the CCLS-patient relationship quality was captured by each measure. When scores of each measure were calculated, the mean STRS score was 3.32 with a range of 2.18 to 4.39. The mean of ARM scores was 4.39 with a range of 2.63 to 5.11. The STRS and ARM were significantly positively correlated ($r = .47$, $p < .001$).

The results of the Confirmatory Factor Analysis revealed that, as predicted, the CCLS responses to the ARM did not meet thresholds for adequate fit. Additionally, the data of the STRS did not fit well either, unlike was previously expected. The CFI for both measures fell below the .95 criterion at .45 for the ARM and .58 for STARS. The factor structure of these STRS and ARM models created from CCLS responses can be found in

appendix A1 and A2 respectively. An additional, two-factor model of STRS was tested using the two most highly correlated subscales, closeness and conflict. The short version of the STRS, while a better fit still did not meet the criterion with a CFI of .65. RMESA, TLI, SRMR, AIC, BIC values were analyzed and continued to demonstrate that the scales used for this study did not originally fit well with the factor structure of the original measures. Attempts were made to adapt the models in order to create a model that fit well and could be used within the field. After dropping items that did not load properly and including residual correlations based on model modification indices, both models were able to meet the thresholds for adequate fit using the subscales of the original measures. The statistics of these adapted models are described in Table 2 and the factor structure of the STRS and ARM models can be found in appendix A3 and A4 respectively. The following associations explored in this paper were from subscales in the adapted models.

Correlations between subscales across both measures were examined to shed light on construct validity. Analyses revealed significant associations between several of the subscales (see Table 3). Closeness was significantly associated nearly every subscale, other than conflict. Similarly, bond was significantly associated with every subscale other than dependency. Significant associations existed between closeness, partnership, confidence, openness, client initiative, and bond which were all highly correlated with one another ($p < .001$). Confidence was associated with closeness and partnership ($p < .01$). Additional significant associations existed ($p < .05$). between dependency and closeness, dependency and conflict, confidence and conflict, and bond and conflict.

Analyses were run to determine the relations between demographic characteristics and the subscales for both measures. Analyses of independent samples *t*-tests run on

CCLS education level, ethnicity, patient gender, patient ethnicity, an in/outpatient setting revealed only one significant associations between patient gender and client initiative subscale scores. Patient gender was significantly related to the ARM client initiative subscale (t (69.64) = 2.66, p = .01). On average, CCLS reported that male patients took more initiative in their care than female patients. Different analyses were run for CCLS and patient gender due to the fact that both CCLS and patient gender were recorded using a categorical scale, however patient demographics revealed binary reporting while CCLS gender was distributed across each of the categories. Therefore, patient gender was analyzed using independent samples *t*-test while CCLS gender was analyzed using one-way *ANOVA.*

One-way *ANOVA* analyses were run on CCLS SES, CCLS gender, and patient race. Originally CCLS race was included in analyses as well, however, only one respondent reported their race as multiracial, the rest reporting white or declined to answer the question. A significant relation existed between the STRS dependency scale and CCLS perceived SES (F (6,70) = 3.37, p = .006). CCLS who reported lower socioeconomic standing scored higher on the patient dependency subscale than those who reported higher socioeconomic standing.

Correlations examined relations between the subscales and age of CCLS, years CCLS has worked, time the patient has been under CCLS care, and time spent directly with patient. The number of years the CCLS has worked was significantly correlated with the ARM bond subscale (r = -.26, p = .02) indicating that those who had been working fewer years reported a closer bond with the patient. The age of CCLS was significantly correlated with the STRS closeness (r = -.24, p = .037) and ARM bond (r = -.29, p = .01)

subscales. These correlations reveal that older CCLS were more likely to report lower levels of closeness and bond than that of younger CCLS.

VI. DISCUSSION

The purpose of the current study was to examine the appropriateness of using an existing measure to quantify CCLS-patient relationships. This effort was achieved through the adaptation of two measures utilized in other, related fields- the STRS and ARM. CCLS indicated how applicable they found each measure, and as expected the ARM was rated significantly more applicable than the STRS. The CFA found that neither the STRS nor ARM had adequate levels of fit compared to the original models. This was predicted for the ARM but not for the STRS. Several significant correlations existed between subscales indicating high validity of the constructs measured by these subscales. Analyses of demographic characteristics revealed that some characteristics were related to CCLS responses to subscales.

CCLS were given the opportunity to provide qualitative feedback. Though this data was not analyzed as part of the goals for the current study, it was reviewed to provide more insight for the discussion. Multiple CCLS referred to therapeutic relationships when providing feedback, corroborating the hypothesis that the ARM was rated as more applicable due to the therapeutic nature of CCLS-patient relationships. The term alliance is commonly used when measuring therapist-client relationships reflecting that the purpose of the relationship is the two individuals working together to accomplish a common goal. Similarly, CCLS work together with patients to support coping throughout hospitalization (McCue, 2018). While CCLS do take on the role of teacher when education patients on diagnoses, procedures, etc., that exists as one intervention to support the common goal defined by the relationship. Understanding that CCLS prefer a

measure that captures the therapist-client alliance indicates that any measure utilized or created should place emphasis on the therapeutic nature of the CCLS-patient relationship.

The factor loadings and correlations of each item were explored to better understand why the measures did not fit well with the original models. Within each of the STRS subscales existed items not significantly correlated with the other items in the construct (Figure A1). For closeness the items were 1- “I share a warm, professional relationship with this child” and 4- “This child is uncomfortable with physical affection or touch from me.” Item 1 was one of the items adapted for use in the study, it is possible that in editing the item to be more applicable I unintentionally altered the construct it measured. Within the field of Child Life common practice for physical touch is not to engage unless it is child initiated which could explain why item 4 wouldn’t be considered a component of closeness in the CCLS-patient relationship. Items 13- “This child feels that I treat him/her unfairly” and 19 “when this child is misbehaving, he/she responds well to my look or tone of voice” were not significantly correlated with the other items within the conflict scale. Patients are typically unaware of the services CCLS are providing to and relationships CCLS have with other patients, therefore item 13 likely does not occur as often in a hospital setting compared to original use in the classroom. Discipline is not often a task that CCLS are responsible for, but instead they employ de-escalation, coping, and redirection in the face of misbehavior. The “look” and “tone of voice” referenced by item 19 may have been perceived as part of procuring a calming environment rather than that of discipline which would completely change the meaning of the item. Within the dependency subscale, item 6- “This child appears hurt or embarrassed when I correct him/her” was the only item not significantly correlated with

the others. This again references discipline and may not be something that occurs often within CCLS-patient interactions. Another potential explanation for the poor fit is the adaptation from a 5- to 7-point Likert scale affected the factor structure. While the items discussed did not load on the expected factor, significant correlations did exist with other items in the measure.

The factor loadings and correlations of the ARM revealed similar patterns to that of the STRS (Figure A2). Within the bond subscale, items 13- "I accept my patient no matter what she/he does" and 19- "I feel supportive" were not significantly correlated with the other items of the subscale. It is possible that in adapting the measure for use with children rather than adults these items no longer accurately capture bond. For example, "accepting" patient behaviors may look different for adults in therapy versus hospitalized children who may externalize their negative emotions. Similarly, being "supportive" may look different within a pediatric context as well. Items 20- "I follow my own plans, ignoring the patient's view of how to proceed" and 27- "I have experienced pushback and/or conflict when working with this patient" were not significantly correlated with the other partnership items. Again, this is potentially due to the age range of the patients being studied and may depend more on the CCLS relationship with the parents rather than the patients themselves. The confidence subscale had only one item not significantly correlated, item 14- "I try to influence my patient in ways that are not beneficial to her/him." Based on qualitative feedback, this reverse-coded item appears to have been interpreted by some CCLS as providing maladaptive interventions, rather than ineffective ones, which may explain it's weak correlations. Within the openness subscale, items 3- "my patient is worried about embarrassing

her/himself with me" and 5- "my patient keeps some important things to her/himself, not sharing them with me" were not significantly correlated with the other items of the subscale. These were the only reverse coded items in this subscale, it is possible that for pediatric patients, being "closed off" may manifest in behaviors not well captured by these items. Item 11- "My patient looks to me for solutions to her/his problems" was the only item not significantly correlated with other items on the client initiative subscale. Hospitalized children are often experiencing several different types of problems that require solutions from parents, doctors, nurses, and other members of the healthcare team. Similar to many items within the STRS, this item is likely impacted by the parent-child relationship. When the ARM is applied within this population, it is possible there are items that do not appropriately capture relationships with children which affects the factor structure. All items that did not load properly were dropped when creating an adapted model with adequate fit.

Additional review of the qualitative responses revealed three main themes that appear to affect CCLS responses: 1) parental involvement, 2) the diagnosis of the patient, and 3) developmental stage of the patient. When considering the results of the CFA, I believe these extraneous variables may have had an impact on the factor structure of the present data. Particularly the role parents and families play in a patient's care. Child Life services are considered a component of the patient- and family-centered care model (Romito, 2021). Due to this, parents are integrated into the care plan in a way that they may not be with teachers and therapists. The relationship between parent and child and parent and CCLS has the potential to confound the quality of the CCLS-patient relationship. Teachers take on the role or primary caregiver for their students while they

are at school and are responsible for providing both support and implementing discipline when appropriate. Often times CCLS are working in conjunction with parents, providing resources for parents to better be able to support their child such as suggesting comfort holds (McGee, 2003). Due to the difference in these roles, some items that are appropriate within the classroom may not apply within the hospital. These include items such as "This child appears hurt or embarrassed when I correct him/her" which was one of the items with lower applicability ratings and "If upset, this child will seek comfort from me" which several CCLS stated that parents are primary comfort. The difference in roles can help to explain the difference in factor structure of the STRS.

When evaluating relations between demographic characteristics and measure responses I sought to provide insight as to why these significant relations may exist. CCLS reported that male patients took more initiative in their care than female patients resulting in a significant relation between gender and the ARM client initiative subscale. It is possible that emotional expression related to gender biases affects the perception of "initiative." The STRS subscale of dependency was significantly correlated with SES, with CCLS who reported lower SES scoring higher on the subscale. Further research would need to be done to better understand why this occurred. However, it may be prudent to recognize that Child Life is viewed as a "helping profession" and the most recent salary survey revealed the mean CCLS salary to be $58,230.56 (ACLP, 2022). It is possible that those with lower SES remain in the field due to emotional involvement which results in more dependent relationships between themselves and their patients. CCLS who reported more years of work experience were more likely to report weaker bonds with patients. Additionally, older CCLS were more likely to report lower levels of

closeness and bond than that of younger CCLS. Child Life is a growing field in which evidence-based practices are evolving quickly. These age discrepancies could be due to difference in education over the years. Some literature suggests that emotional distance and detachment have been valued by nurses to reduce emotional distress when working with pediatric patients (Rollins, 2005). As with nursing, older or more experienced CCLS spend time and energy building relationships with patients and may intentionally distance themselves to reduce burnout resulting in lower levels of closeness and bond. Additionally, CCLS who reported spending more time with their patients also reported a closer bond with them. This correlation remained significant when explored with inpatient and outpatient populations independently indicating that amount of time spent with a patient can have a significant effect on the CCLS-patient bond regardless of the setting.

Diagnosis and age of patient were not collected in an attempt to protect private health information. The diagnosis of the patient contributes to whether the patient is seen in an inpatient or outpatient setting, the amount of time they spend in the hospital, and the patient's abilities. Time spent with patient, time the patient has been under CCLS care, and inpatient/outpatient setting type did not appear to have any correlations with subscales. However, it is possible that diagnosis encompasses all of these things in addition to patient ability, prognosis, and other, unidentified variables, and affects the quality of CCLS-patient relationship. In addition, much of the foundational knowledge of Child Life is rooted in developmental theory (ACLP, 2019). Several CCLS responding to the survey included that they selected infants, toddlers, or patients with developmental delays which impacted their responses to certain items. The STRS is has not been

validated with children under three years of age, and adaptation of ARM was not done specifically with infants in mind. Both of which will affect the CCLS ability to accurately capture the relationship they share with their patient within the confines of these measures. In addition, STRS has been used to evaluate the relationship teachers share with students that have developmental delays, but these studies are limited and non-comprehensive and more research is needed to validate use of measure with this population (Blacher et al., 2009; Eisenhower et al., 2007).

Despite the CFA originally indicating that the factor structure of the present data is not a good fit when compared to the factor structure of the original measures, the correlations between subscales provides valuable insights as to some of the constructs that make up CCLS-patient relationships. Nearly all of the constructs from both STRS and ARM associated with positive relationships were significantly correlated. Most significant were the correlations between subscales closeness, partnership, confidence, openness, client initiative, and bond. These correlations indicate high construct validity between the subscales meaning that these subscales all similarly capture aspects of the CCLS-patient relationship. The correlations with the client initiative subscale were initially surprising, but much of Child Life practice emphasizes the importance of child led interventions and encourages patients to advocate for themselves and implement coping skills independently (Humphreys & LeBlanc, 2016). These correlations have implications for some of the constructs that comprise CCLS-patient relationships and any measure utilized or created should include the same or similar constructs when measuring CCLS-patient relationships. Additionally, the relationship quality scores of the STRS and

ARM were significantly correlated. These correlations, again, indicate construct validity in that high quality relationships were captured similarly across both measures.

The original goal of this study was not to provide a measure for use. However, after exploring model preferences and creating an adapted model with good fit, I have included an adapted ARM scale that can be piloted with CCLS (See Appendix B). The STRS was not included even though it met fit thresholds due to the fact that the ARM was rated as significantly more applicable by CCLS. Future research will be needed with a larger sample size in order to further adapt the model and provide deeper understanding of how the behaviors measured by the model are related to patient outcomes.

Limitations and Future Directions

The sample size of the study was much smaller than the intended goal, capturing only 27.5% of participant goal, resulting in a reduction of power. Some of the contributing factors to decreased sample size are likely related to the length of the survey and ability to provide incentive. The study was approximately 20 minutes long with no incentive to participate. Indeed, several surveys were initiated but remained incomplete with too much missing data to be included in analyses. Future research should consider shortening the survey (i.e., only including the ARMs) and/or providing appropriate incentive to promote participation.

As previously mentioned, age and diagnosis information was not collected from CCLS. Although this was done to ensure privacy of patients, steps could have been taken to ensure anonymity while still collecting this relevant data. Provided that multiple CCLS referenced these variables in the qualitative feedback, it is possible that correlations

between these variables and CCLS-patient relationships exist. Future research should explore these potential correlations.

The goal of this study was not to produce a measure for use in a Child Life setting, but rather to understand if it was appropriate to use a standardized measure, and what the structure of that may look like. Neither scale measured relationships that extended into the 5- to 6-point range, essentially indicating that relationships captured in this study were of poor to moderate quality. Based on this data and the present study, I would recommend a qualitative study be done to collect feedback from CCLS directly regarding the behaviors they feel make up the quality of relationship they have with their patients and families. It seems likely that the constructs that make up high quality CCLS-patient relationships were not captured by either scale, and the family-centered care component of the profession was not considered. A qualitative study will provide more insight as to what behaviors better capture high quality CCLS-patient relationships. Additional future studies can then better capture the constructs and create a new measure specific to CCLS-patient relationships. While it may not be appropriate for direct adaptation for use in the field of Child Life, the ARM should be used as a reference when creating a CCLS-patient relationship measure. CCLS rated the items from the ARM as highly applicable and the therapeutic nature and shared coping goals characteristic of Child Life support the use of a measure designed to capture the therapeutic relationship quality a CCLS shares with their patient.

Conclusion and Implications

Research studies consistently indicate the effects adult-child relationships have on child outcomes (Birch & Ladd, 1997; Hong et al., 2018; Nievar et al., 2014; Pianta et al.,

1997; Shirk & Karver, 2003), and the field of Child Life currently lacks a standardized measure intended to capture these CCLS-patient relationships. Identifying or creating a measure could allow for CCLS to better understand how specific behaviors affect the relationships they share with patients, and in turn promote behaviors that contribute to high quality relationships. As previously mentioned, diagnosis and age likely affect degree to which this measure can be used with patients. Due to this, it is recommended that this measure be used with patients 3-years of age and older. In addition, a more in depth understanding of the behaviors that comprise high quality CCLS-patient relationships will allow for more specified training. The growing field of Child Life works to implement research-backed, evidenced-based services to patients and families. The ability to identify the specific constructs and behaviors of high-quality CCLS-patient relationships will support professional development, provide supportive validity of the impact services provided have on patients and families, and promote positive outcomes in patients and families.

Table 1

Demographic Characteristics of CCLS

Characteristic	Certified Child Life Specialists							
	n	%	*M*	*SD*	Min	Max	Skew	Kurtosis
Years Worked	76		12.31	9.15	1	44	1.01	0.87
Age	77		34.79	9.88	24	58	0.93	-0.31
Socioeconomic Status	77		6.19	1.19	3	9	-0.2	-0.18
Total length of patient care (months)	75		13.42	25.26	.01	168	4.02	20.19
Total time spent with patient (hours)	77		74.97	177.1	1	1344	8.65	74.82
Gender								
Female	73	94.81						
Male	2	2.60						
Nonbinary/other	1	1.30						
Prefer not to answer/Unknown	1	1.30						
Total	77	100						
Race								
White	74	96.10						
Multiracial	1	1.30						
Prefer not to answer/Unknown	1	1.30						
Missing	1	1.30						
Total	77	100						
Ethnicity								
Hispanic or Latino Origin	7	9.09						
Not Hispanic or Latino Origin	66	85.71						
Prefer not to answer/Unknown	4	5.19						
Total	77	100						
Education								
Bachelor's Degree	23	29.87						
Master's Degree	54	70.13						
Total	77	100						

Table 2

Demographic Characteristics of Patients

Characteristic	Patient	
	N	%
Gender		
Female	39	50.65
Male	37	48.05
Prefer not to answer/Unknown	1	1.30
Total	77	100
Race		
American Indian or Alaska Native	2	2.60
Black or African American	18	23.38
White	46	59.74
Multiracial		
Prefer not to answer/Unknown	10	12.99
Missing	1	1.30
Total	77	100
Ethnicity		
Hispanic or Latino Origin	15	19.48
Not Hispanic or Latino Origin	52	67.53
Prefer not to answer/Unknown	10	12.99
Total	77	100
Type of Care		
Inpatient	39	50.65
Outpatient	27	35.06
Other	11	14.29
Total	77	100

Table 3

Confirmatory Factor Analysis

Models	X^2	*df*	CFI	TLI	RMSEA	SRMR	AIC	BIC
STRS	584.95*	347	.58	.54	.09	.12	7220.94	7424.86
ARM	629.14*	314	.45	.39	.11	.11	6747.96	6961.25
STRS-Adapted	207.83	176	.93	.91	.05	.09	5329.02	5507.15
ARM-Adapted	116.29	103	.96	.95	.04	.07	4122.60	4279.63

Note. STRS = Student Teacher Relationship Scale; ARM = Agnew Relationship Measure;
X^2 = chi-square test; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; SRMR = standardized root-mean-square residual; AIC = Akaike information criterion; BIC = Bayesian information criterion.
*$p < .05$, STRS

Table 4

Correlations between STRS and ARM Measure Subscales

	Total (N = 77)							
	1	2	3	4	5	6	7	8
1 Closeness[a]	-							
2 Conflict[a]	-.20	-						
3 Dependency[a]	.34**	.12	-					
4 Partnership[b]	.56**	-.36**	.11	-				
5 Confidence[b]	.50**	-.26*	-.02	.48**	-			
6 Openness[b]	.68**	-.22	-.24*	.63**	.50**	-		
7 Client Initiative[b]	.35**	-.17	.08	.54**	.26*	.44**	-	
8 Bond[b]	.44**	-.48**	.13	.52**	.33**	.44**	.23*	-

Note. [a] Student Teacher Relationship Scale (STRS) Subscales. [b]Agnew Relationship Measure (ARM) Subscales.
* $p < .05$, ** $p < .01$

APPENDIX SECTION

Appendix A

Confirmatory Factor Analysis *M*Plus Factor Loadings

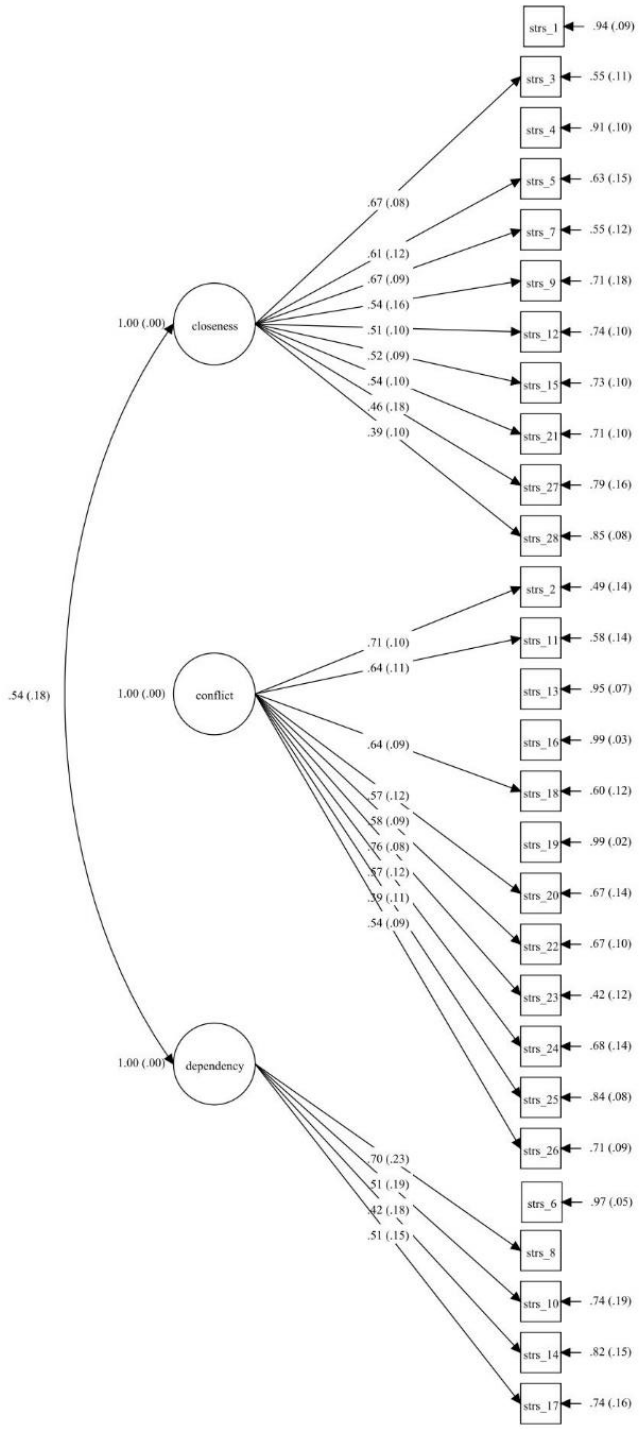

Figure A1. Significant factor loadings from the original STRS CFA.

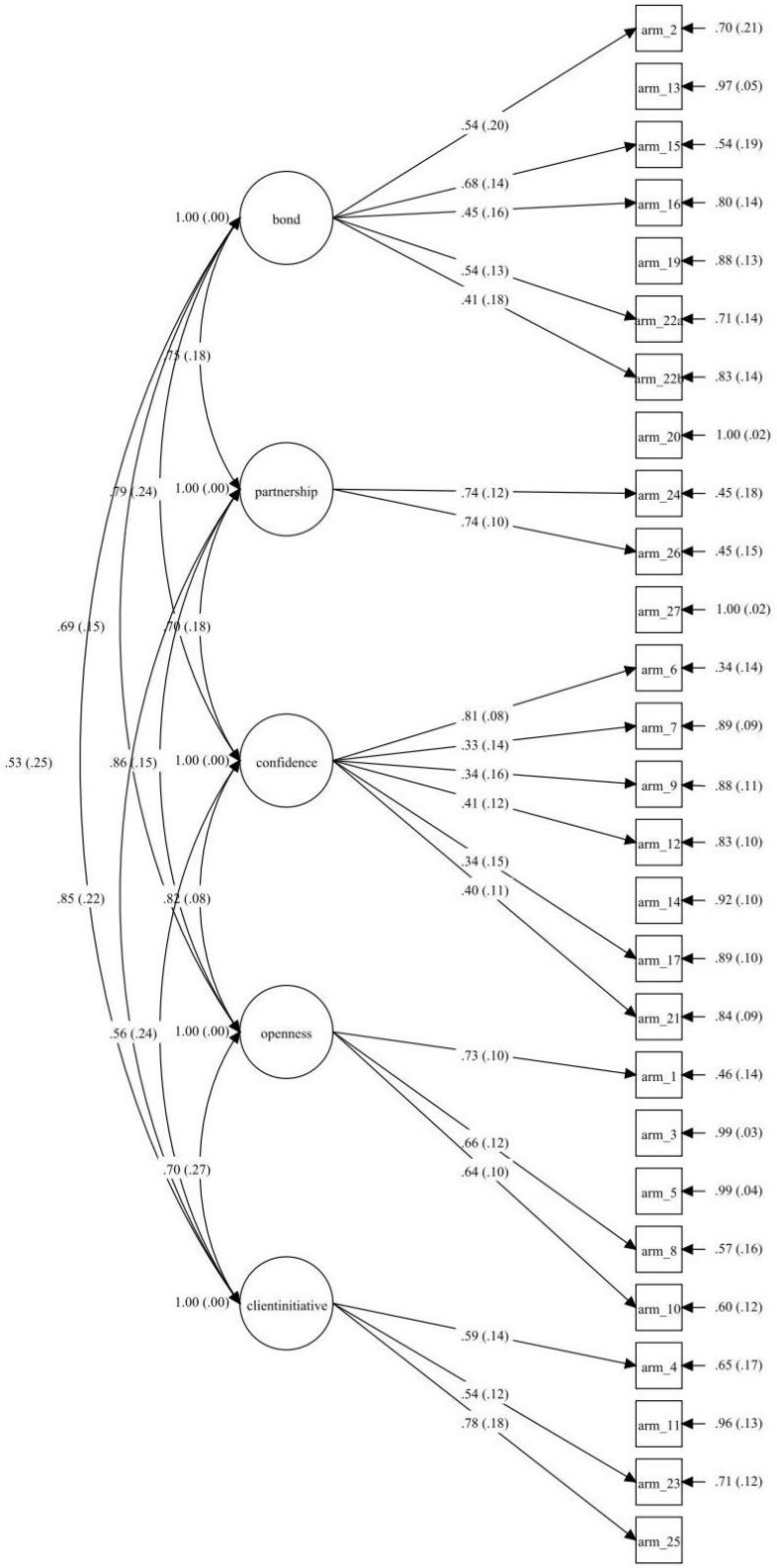

Figure A2. Significant factor loadings from the original ARM CFA.

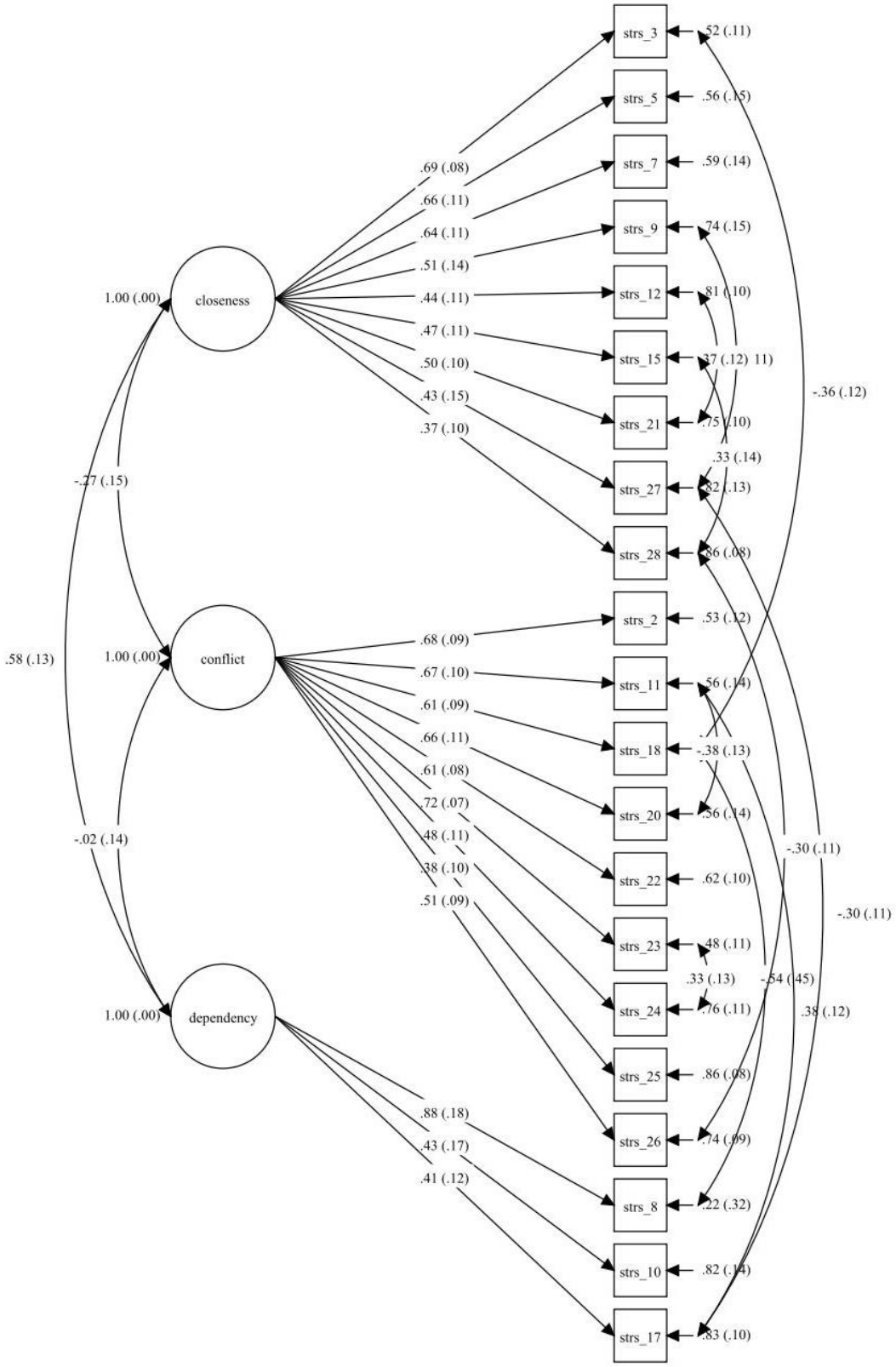

Figure A3. Factor loadings of adapted STRS model.

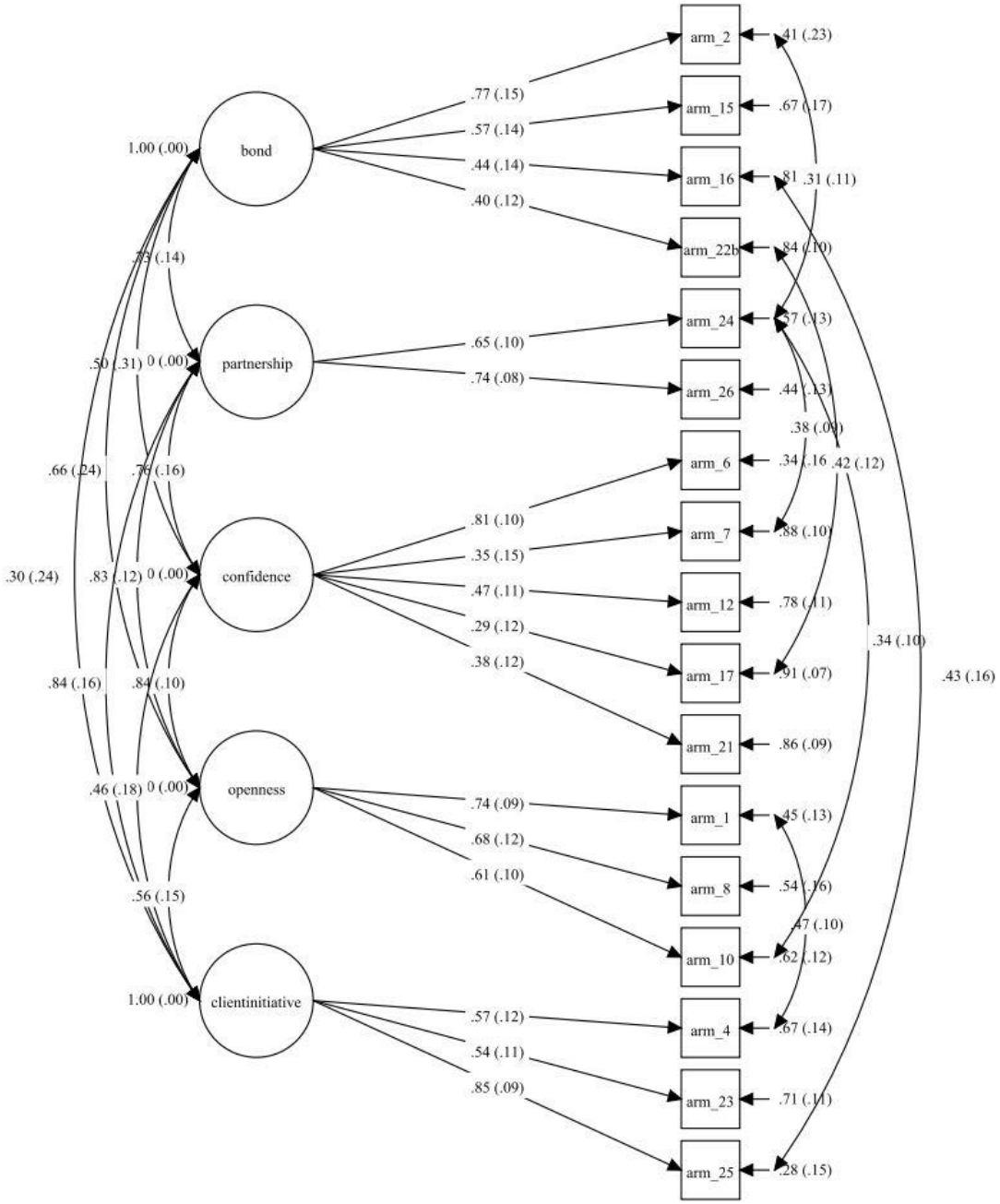

Figure A4. Factor loadings of adapted ARM model.

Appendix B

Adapted ARM created for use in the field of Child Life

Adapted Agnew Relationship Measure

1. My patient feels free to express the things that worry him/her.
2. My patient is friendly towards me.
3. My patient takes the lead when she/he is with me (i.e., during play or other activities)
4. My patient has confidence in me and my techniques.
5. My patient feels optimistic about his/her progress.
6. My patient feels that she/he can openly express her/his thoughts to me.
7. My patient can discuss personal matters she/he is ordinarily ashamed or afraid to reveal.
8. My professional skills are impressive to my patient.
9. I find it hard to understand my patient. *
10. I feel warm and friendly with my patient.
11. I do not give my patient the guidance she/he would like.
12. I feel confident in myself and my techniques.
13. I feel inpatient with my patient. *
14. I expect my patient to take responsibility rather than to be dependent on me.
15. My patient and I work together to achieve the goals we have set.
16. I encourage my patient to take the lead.
17. My patient and I agree about how to work together.

Note. All items are scored on 7-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree."
Measure can be scored by taking the mean of all items.
*Items reverse scored.
Bond subscale consists of items 2, 9, 10, and 13.
Partnership subscale consists of items 15 and 17.
Confidence subscale consists of items 4, 5, 8, 11, and 12.
Openness subscale consists of items 1, 8, and 10.
Client initiative subscale consists of items 3, 14, and 16.

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