



**The Child and
Adolescent
Scale of
Participation
(CASP)[©]**

Administration and
Scoring Guidelines

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ABOUT THE AUTHOR

Gary Bedell, Ph.D., OTR, FAOTA is the primary author of the Child and Adolescent Scale of Participation (CASP) and the larger Child and Family Follow-up Survey (CFFS) that consists of the CASP and other measures. Dr. Bedell is an Associate Professor at Tufts University, Department of Occupational Therapy, Medford, MA, USA. His research involves measurement development and investigating effective strategies to promote participation of children and youth in home, school and community activities. Most of his recent work has focused on children and youth with acquired brain injuries and their families.

INTRODUCTION

The Child and Adolescent Scale of Participation (CASP) measures the extent to which children participate in home, school, and community activities compared to children of the same age as reported by family caregivers (Bedell, 2004, 2009). It was designed as part of the *Child and Family Follow-up Survey (CFFS)* (Bedell, 2004; Bedell & Dumas, 2004, Galvin, 2010, Wells, 2009) to monitor outcomes and needs of children with traumatic and other acquired brain injuries (ABI). The content and methods used in the CASP and CFFS were informed by the International Classification of Functioning (ICF, WHO, 2001), research addressing participation of children / youth with a range of disabilities and factors related to the child, family and physical and social environment that support and or hinder participation. As well, feedback was obtained by parents of children/youth with ABI and clinical and measurement experts to develop and refine the CASP and CFFS (Bedell, 2004; Bedell, Cohn, & Dumas, 2005; Dumas, Bedell, & Hamill, 2004).

The CASP subsequently has been used separately from the CFFS and to assess children with other diagnoses (Bedell, 2009; Robertson, et al., 2011; Voll, 2009; Weintraub, Rot, Shoshani, Pe'er, & Weintraub, 2011). The CASP also has been reviewed by others and described as a key outcome measure for children and youth with ABI & other disabling conditions (Badge, Hancock, & Waugh, 2009; Bedell, in press; Bedell & Coster, 2009; Bedell, Khetani, Coster, Law, & Cousins, in press; MacCauley et al., in press; Haley, Graham, & Dumas, 2004; McConachie, Colver, Forsyth, Jarvis, & Parkinson, 2006; McDougall, Wright, Schmidt, Miller, & Lowry, 2011; Sherwin, et al., 2006; Ziviani, Desha, Feeney, & Boyd, 2010).

DESCRIPTION OF THE CASP

The CASP consists of 20 ordinal-scaled items and four subsections: 1) Home Participation (6 items), 2) Community Participation (4 items), 3) School Participation (5 items), and 4) Home and Community Living Activities (5 items). The 20 items are rated on a four-point scale: "Age Expected (*Full participation*)," "Somewhat Restricted," "Very Restricted," "Unable." A "Not Applicable" response is selected when the item reflects an activity in which the child would not be expected to participate due to age (e.g., work). Most items are applicable to children who are five and older and thus it is suggested that the CASP is used for school-aged children (5 years and older) so that most items and subsections can be completed.

Each CASP item examines a broad type of activity or life situation. Most items include examples of activities that fall within the broad life situation. Item, subsection, and total summary scores can be examined for use in research and practice. Higher scores reflect greater age-expected participation. The CASP also includes open-ended

questions that ask about effective strategies and supports and barriers that affect participation. (The CASP protocol is provided at the end of these guidelines for further description of the items and rating scale.)

The CASP can be used for individualized intervention planning, program evaluation, and multi-site and population-based research. The CASP does not include a demographic section, so additional demographic information (e.g., age, gender, type of disability, facility, geographic location, time since diagnosis) will need to be asked or data from the CASP will need to be linked to databases that include demographic information that is relevant to the clinical, research and/or policy questions being asked.

OVERVIEW OF PSYCHOMETRIC RESULTS

Bedell (2004; 2009) has reported the main results of psychometric testing of the CASP based on two studies. Data for the first study was conducted with 60 parents/guardians of children and youth with acquired brain injury discharged from Franciscan Hospital for Children, Boston, MA, USA (Bedell, 2004; Bedell & Dumas, 2004). Psychometric findings related to the initial version of the CASP and the larger Child and Family Follow-up Survey (CFFS) were reported (Bedell, 2004) as were descriptive and exploratory results (Bedell & Dumas, 2004). The second study focused specifically on further validation of the CASP (Bedell, 2009). Data for this study were collected from 313 parents or primary guardians of children/youth with a range of disabling conditions (83%) and children/youth without disabilities (17%). Data were collected in the USA (74%), Canada (15%), Australia (6%), and Israel (5%).

The CASP has reported evidence of test re-test reliability (Intraclass Correlation Coefficient = 0.94), internal consistency ($\alpha \geq 0.96$) and construct and discriminant validity. Moderate correlations were found between the CASP scores and scores from measures of functional activity performance ($r=0.51$ to 0.75 ; Pediatric Evaluation of Disability Index [PEDI], Haley, Coster, Ludlow, Haltiwanger, & Andrellos, 1998), extent of child impairment ($r=-0.58$ to -0.66 ; Child and Adolescent Factors Inventory [CAFI], Bedell, 2004; 2009) and problems in the physical and social environment ($r= -0.43$ to -0.57 ; Child and Adolescent Scale of Environment [CASE], Bedell, 2004; 2009). Significant differences in CASP scores were found related to type of disability (Bedell, 2009). As expected, children without disabilities, on average, had significantly higher CASP scores than children with disabilities. No significant differences were found related to age category

Recent results from factor analyses showed three factors contributing 63% of the variance explained: 1) Participation in social, leisure, communication items (50%); 2) Participation in advanced daily living items (7%); 3) Participation in basic daily living and mobility items (6%) (Bedell, 2009). Recent results from Rasch analyses demonstrated that the CASP appears to be measuring essentially a uni-dimensional construct. An expected pattern of life situations for which children would find more or less challenging to participate was found. Greater limitations were found in school and community activities requiring more complex cognitive and social skills and lesser limitations were found in more basic and routine home and school activities such as mobility, communication and personal-care. Two of the 20 CASP items (Shopping/Managing Money; Using Transportation) showed minor misfit to the Rasch measurement model (i.e., the actual responses for these two items deviated somewhat from the expected

pattern of responses predicted). Thus, further examination of these items is a future area of inquiry.

It is important to note, that additional psychometric testing of the CASP with a larger and more diverse sample is currently underway. Additional and more detailed findings will be reported once data have been obtained and analyzed from colleagues. Also, the responsiveness of the CASP in detecting change over time or due to intervention has not been examined and will be a focus of future inquiry.

The CASP has been translated in Spanish, French, German, Hebrew, and Mandarin. An English and Spanish youth-report version was also designed for a large population-based longitudinal study of children and youth with Traumatic Brain Injury in the USA. Psychometric testing has yet to be conducted for these versions and will be a focus of future inquiry.

ADMINISTRATION

The CASP takes about 10 minutes to administer when done separately from the larger follow-up survey (CFFS). There is no specific training to administer the CASP or the CFFS. Those using the CASP or larger CFFS for their specific purposes should be knowledgeable about the content and rating scales used in the CASP, the key concepts being measured (particularly, “participation” and “environmental factors”) as defined in the International Classification of Functioning (WHO, 2001; 2007) and the conceptual and methodological background information and psychometric findings reported in two published articles briefly summarized in the introduction (Bedell, 2004; 2009).

There are two ways to administer the parent/guardian - report version of the CASP. Consistency between the two modes of administration has not been examined.

Self-Administered (in person or mail survey): The parent or guardian is provided with the CASP in person or via postal mail (or e-mail attachment), asked to complete it on his or her own and then return it to the specific contact person responsible for data coordination (in person or via postal mail). Parents/guardians should be provided with a description of the specific purposes of the project or research being conducted in person or via a cover letter if the CASP or CFFS is sent via postal mail or e-mail. Each institution is responsible for adhering to guidelines for research ethics with human participants (e.g., informed consent procedures) if the CASP or CFFS is used for research purposes.

Interviewer administered (in-person or by telephone): The parent or guardian would be administered the CASP in person or by phone using the same version used for self-administration. The interviewer essentially asks the same questions along with the examples provided as they are described in the order in which they are asked on the CASP protocol. Respondents and interviewers are allowed to ask for and provide clarification or further explanation, if needed.

SCORING

There are a number of ways to score the CASP depending on the purpose of the project or research being conducted:

CASP Total Summary Scores: This score is the sum of all “Applicable” items divided by the maximum possible score of applicable items. The maximum possible

score if all items were applicable would be: 20 items X 4 = **80**. This score then should be multiplied by 100 to conform to a 100-point scale. For example, let's say the sum of all 20 items was 66. This sum (66) would be divided by 80 (which would equal 0.825) and then multiplied by 100 to obtain a total summary score of 82.5.

CASP Subsection Summary Scores: Subsection summary scores can be used for all four or selected subsections depending on the specific aims of the research or project. Computation of subsection summary scores is essentially the same as for computation of the total summary score. This score is the sum of all "Applicable" items in each subsection divided by the maximum possible score of applicable items in each subsection. The maximum possible score if all items in each subsection were applicable would be: 1) Home Participation, 6 items X 4 = **24**; 2) Community Participation, 4 items X 4 = **16**; 3) School Participation, 5 items X 4 = **20**; and 4) Home and Community Living, 5 items X 4 = **20**. This score then should be multiplied by 100 to conform to a 100-point scale. For example, let's say the sum of all six Home Participation items was 18. This sum (18) would be divided by 24 (which would equal 0.75) and then multiplied by 100 to obtain a Home participation subsection summary score of 75.

CASP Item-level Scores: Item-level scores can be used if interested in responses to or change in specific items (i.e., specific types of life situations or activities) or for comparing item-level responses or change among all or selected CASP items. This score is the rating provided for each item (e.g., 1=Unable to participate, 2=Very limited, 3=Somewhat limited, 4=Age expected / Full participation).

How to address "Not Applicable" responses in the computation of CASP scores is still in development and will be further explored as the next wave of data have been received and analyzed. Currently, there are two ways to address "Not Applicable"

responses in the scoring. Most investigators have used the aforementioned guidelines, i.e., they do not include the not applicable item in the scoring. Another option is to first take the average of all items and/or specific subsections and use this as the score for the non applicable item, and then use the aforementioned guidelines for computation of total summary and subsection summary scores. Item and or subsection scores should be the primary scores used when there are many non-applicable items responses, i.e., when the CASP is used with younger children.

The open-ended questions at the end of the CASP can provide useful information to understand factors that might support or hinder the child's participation and elaborate on information that was not obtained from the ordinal-scaled items. This information along with the responses to the ordinal-level responses specific to each child/youth is useful for individualized family-centered planning. As well, information provided to from open-ended questions from a larger group of participants involved in programs or research projects can be content analyzed and summarized to inform program, research or policy-related decisions. Responses from each ordinal-scaled item can be aggregated using descriptive statistics to inform similar decisions.

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APPENDIX: Child & Adolescent Scale of Participation (CASP)

Child's name _____

**Child & Adolescent
Scale of Participation
(CASP)**

- Instructions -

1. This scale asks questions about your child's participation in activities and events at home, school and the community. There also are a few questions that ask about strategies, assistive devices or modifications that are used or have been done to help your child participate if this is needed.
2. There are no right or wrong answers. You will have to choose, and in some cases write, the answer that best describes your child's participation and things that help or interfere with his or her participation. If you are not sure about how to answer a question, give your best guess.

Thank you!

Your name _____

Your relationship to child _____

Date you completed survey _____

(Month / Day / Year)

We are interested in finding out about the activities that your child participates in at home, school and in the community.

You will be asked about your child’s current level of participation with activities as compared to other children his or her age. For each item, choose one of the following responses:

- *Age expected (Full participation)*, your child participates in the activities the same as or more than other children his or her age. [*With or without assistive devices or equipment*]
- *Somewhat limited*, your child participates in the activities somewhat less than other children his or her age [*Your child may also need occasional supervision or assistance*]
- *Very limited*, your child participates in the activities much less than other children his or her age. [*Your child may also need a lot of supervision or assistance*]
- *Unable*, your child can not participate in the activities, although other children his or her age do participate.
- *Not applicable*, other children your child’s age would not be expected to participate in the activities.

Please select one answer by placing an X in one of the boxes next to each item. If you are not sure, choose your best guess.

<p>Compared to other children your child’s age, what is your child’s current level of participation in the following activities?</p> <p>HOME PARTICIPATION</p>	Age expected	Somewhat limited	Very limited	Unable	Not applicable
1) Social, play or leisure activities with family members at home (e.g., games, hobbies, “hanging out”)					
2) Social, play or leisure activities with friends at home (can include conversations on the phone or internet)					
3) Family chores, responsibilities and decisions at home (<i>For younger children</i> this may be getting things or putting things away when asked or helping with small parts of household chores; <i>For older children</i> this may be more involvement in household chores and decisions about family activities and plans)					
4) Self-care activities (e.g., eating, dressing, bathing, combing or brushing hair, using the toilet)					
5) Moving about in and around the home					
6) Communicating with other children and adults at home					

<p>Compared to other children your child’s age, what is your child’s current level of participation in the following activities?</p> <p>NEIGHBORHOOD AND COMMUNITY PARTICIPATION</p>	Age expected	Somewhat limited	Very limited	Unable	Not applicable
7) Social, play, or leisure activities with friends in the neighborhood and community (e.g., casual games, “hanging out,” going to public places like a movie theater, park or restaurant)					
8) Structured events and activities in the neighborhood and community (e.g., team sports, clubs, holiday or religious events, concerts, parades and fairs)					
9) Moving around the neighborhood and community (e.g., public buildings, parks, restaurants, movies) [<i>Please consider your child’s primary way of moving around, NOT his or her use of transportation</i>]					
10) Communicating with other children and adults in the neighborhood and community					

<p>Answer the following 5 questions if your child attends school or another structured educational program such as an early intervention program or day care center. <u>Please specify</u> the type of program your child is attending here:</p>					
<p>Compared to other children your child’s age, what is your child’s current level of participation in the following activities?</p> <p>SCHOOL PARTICIPATION</p>	Age expected	Somewhat limited	Very limited	Unable	Not applicable
11) Educational (academic) activities with other children in his or her classroom at school					
12) Social, play and recreational activities with other children at school (e.g., “hanging out,” sports, clubs, hobbies, creative arts, lunchtime or recess activities)					
13) Moving around at school (e.g., to get to and use bathroom, playground, cafeteria, library or other rooms and things that are available to other children his or her age)					
14) Using educational materials and equipment that are available to other children in his or her classroom/s or that have been modified for your child (e.g., books, computers, chairs and desks)					
15) Communicating with other children and adults at school					

Compared to other children your child's age, what is your child's current level of participation in the following activities? HOME AND COMMUNITY LIVING ACTIVITIES	Age expected	Somewhat limited	Very limited	Unable	Not applicable
16) Household activities (e.g., preparing some meals, doing laundry, washing dishes)					
17) Shopping and managing money (e.g., shopping at stores, figuring out correct change)					
18) Managing daily schedule (e.g., doing and completing daily activities on time; organizing and adjusting time and schedule when needed)					
19) Using transportation to get around in the community (e.g., to and from school, work, social or leisure activities) [<i>Driving vehicle or using public transportation</i>]					
20) Work activities and responsibilities (e.g., completion of work tasks, punctuality, attendance and getting along with supervisors and co-workers)					

21.a. Please describe the type of things that interfere with your child's participation in the above-mentioned activities (e.g., things that your child does or that others do; or things about your home, school or community) [*Please write clearly*]:

21.b. Please describe the type of things that help with your child's participation in the above-mentioned activities (e.g., things that your child does or that others do; or things about your home, school or community). [*Please write clearly*]:

22. Does your child currently use any assistive devices or equipment to help him or her participate (e.g., adapted eating utensils, shower chair, note-taker for school, daily planner, computer)?

Yes No

[If Yes], please identify:

23. Have any changes been made to your home, community or the school (or work) setting to help your child participate (e.g., rearranging furniture and materials, adjusting lighting or noise levels, building a ramp or other physical structures)?

Yes No

[If Yes], please describe:

**THANK YOU FOR COMPLETING
THE CHILD AND ADOLESCENT SCALE OF PARTICIPATION!**

*The CASP was originally developed by Gary Bedell, Ph.D., OTR, FAOTA
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