Perceived Personal and Social Competence: Development of Valid and Reliable Measures

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Abstract

During the last 20 years, youth programming has shifted from risk reduction to youth development. While numerous instruments exist to measure selected individual characteristics/competencies among youth, a comprehensive instrument to measure four constructs of personal and social skills could not be identified. The purpose of this study was to develop four assessment instruments to measure perceived personal/social competence. Specifically, this study focused on identifying items to measure: (a) intrapersonal skills, (b) interpersonal skills, (c) coping skills, and (d) judgment skills. A Delphi panel of nine professionals in health education, youth development programming, and instrument development established content validity. Readability of the four scales ranged from 3.82 to 6.43 using the Gunning Fog Index. Internal consistency reliability was calculated for intrapersonal skills (α=.96), interpersonal skills (α=.91), coping skills (α=.89), and judgment skills (α=.91). Program planners and evaluators could use one or all four scales (i.e., intrapersonal, interpersonal, coping, judgment skills) to assess short-term impact of their youth development programs.

Introduction

As youth progress from adolescence to young adulthood, they typically acquire a variety of personal and social skills critical for dealing with a myriad of situations, problems, pressures, and dilemmas (Erikson, 1968; Kohlberg, 1981; Maslow, 1968; Piaget, 1952). They make choices, set personal goals, establish personal limits, learn how to manage emotional stress, build relationships, and hopefully, emerge as productive, contributing young adults. Nearly 20 years ago, however, *Code Blue: Uniting for a Healthier Youth* (National Commission on the Role of Schools and the Community in Improving Health, 1990), stated: "For the first time in the history of this country, young people are *less* healthy and *less* prepared to take their places in society than were their parents" (Executive Summary).

In 1991, in response to this report, the Centers for Disease Control and Prevention, Division of Adolescent and School Health (CDC-DASH) established a surveillance system to monitor health-risk behaviors of high school youth (www.cdc.gov/HealthyYouth). Although significant progress has been made toward decreasing most health-risk behaviors, many high school youth still engage in behaviors that could threaten their current health and/or academic achievement and could lead to significant long-term health/other consequences. Moreover, a review of trend data from the Youth Risk Behavior Survey results and other surveillance systems (for example, *Monitoring the Future Survey* [Johnston, O'Malley, Bachman, & Schulenberg, 2009a; 2009b] and the *National College Health Assessment* [American College Health Association, 2008]) has revealed a decrease in age of initiation of some behaviors.

Additionally, several Carnegie Council on Adolescent Development reports (1989, 1992, 1994, 1995) as well as key research on resiliency (Garmezy, 2001; Masten & Coatsworth, 1998; Werner & Smith, 1982, 1992) shifted the focus of youth programming from risk reduction to healthy youth development. Pittman and Cahill (1992) defined youth development as an ongoing process in which individuals seek ways to meet their developmental needs and build skills and competencies that will allow them to function effectively and efficiently in their daily lives. Their youth development framework, grounded in the work of Erikson (1968), Kohlberg (1981), Maslow (1968), and Piaget (1952), encompasses seven developmental needs (i.e., safety and structure, closeness and relationships, belonging and group membership, self-worth and ability to contribute, independence and control over one's life, competency and mastery, and self-awareness) and five competency domains (i.e., cognitive/creative, health/physical, personal/social, career/vocational, and citizenship). This youth development framework is dynamic; developmental needs and competencies are interdependent and synergistic. Developmental needs and youth competencies also covary; as competence in one domain increases, it could meet one or more developmental needs and/or increase competence in other domains (Pittman & Cahill, 1992).

Numerous school-based, community-based, and outdoor adventure programs addressing one or more developmental needs and/or competencies have examined their impact on health-risk behaviors and/or selected measures of school performance (for example, Carson & Gillis, 1994; Conrad & Hedin, 1982; Flay, 2002; Hawkins, Catalano, & Miller,

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1992; Kirby et al., 1994). In addition to reducing prevalence of various health-risk behaviors, these programs had a positive impact on personal development, self-confidence, problem-solving skills, communication skills, cooperation, self-management, and other intrapersonal/interpersonal strengths.

Personal and social competence as a means to address youth health-risk behaviors is supported by the National Health Education Standards (Joint Committee on National Education Standards [JCNHES], 2007) and CDC's *Characteristics of an Effective Health Education Curricula* (CDC-National Center for Chronic Disease Prevention and Health Promotion, 2008). Specifically, in a review of risk behavior prevention programs, one common element of successful programs was inclusion of skill building experiences (Eisen, Pallitto, Bradner, & Bolshun, 2000). Skills addressed included verbal and non-verbal communication skills, resistance skills, assertiveness skills, decision-making skills, problem-solving skills, and analyzing influences (Botvin, Baker, Dusenbury, Botvin, & Diaz, 1995; Howard & McCabe, 1990; Jemmott, Jemmott, & Fong, 1998; Kirby, Barth, Leland, & Fetro, 1991; St. Lawrence et al., 1995; Walter, Vaughan, & Wynder, 1989). As described by CDC, personal and social skills were "communication, refusal, assessing accuracy of information, decision–making, planning and goal–setting, self–control, and self–management, that enable students to build personal confidence and ability to deal with social pressures and avoid or reduce risk behaviors" (National Center for Chronic Disease Prevention and Health Promotion, 2008, ¶ f). Pittman and Cahill's (1992) framework defined personal and social competence as including interpersonal, intrapersonal, coping, and judgment skills. While numerous measurement instruments exist to measure selected individual characteristics/competencies, a comprehensive instrument measuring perceived personal and social skills could not identified (Fetro, 1999, 2000).

Purpose

While a long-term research goal is to develop multiple assessment measures (psychometric and authentic) related to five youth development competencies as described in Pittman and Cahill's (1992) youth development framework, the purpose of this study was to develop four valid and reliable instruments to measure personal/social competence (PSC). Specifically, this study focused on identifying and integrating items from existing instruments into more comprehensive scales to measure: (a) intrapersonal skills, (b) interpersonal skills, (c) coping skills, and (d) judgment skills. For each PSC scale, content validity, readability, and internal consistency reliability was established.

The instrument development process consisted of several steps. First, a comprehensive literature review of published theoretical and empirical articles in the fields of education, health, medicine, sociology, and psychology was conducted. A computerized search of publications 1966 to 1999 within five databases (i.e., Educational Resource Information Center [ERIC]; Medline Express; Social Science Abstracts; Social Work Abstract; Health STAR) guided the literature review. Based on characteristics of resilient youth and protective factors summarized by Benard (1991), developmental needs and youth competencies identified in Pittman and Cahill's (1992) youth development framework, and internal/external assets documented by Scales & Leffert (2004), key words were identified for use in each electronic search. In addition, key words related to selected health-risk behaviors and education outcomes were entered in combination with resiliency and youth development key words (see Table 1). All searches were limited with the keyword "adolescent." The number of identified published works was larger than expected (n > 600) so whenever possible, abstracts were reviewed first to determine relevance before inclusion within this study.

Second, a content analysis of relevant *empirical* studies (n = 263) was conducted. A data collection worksheet was used to consistently gather summary information about each study. Categories included: date/author, title, description of sample (location, composition, size), study description (purpose, research questions, research design), instrumentation (instrument name with reference, constructs measured), statistical methods, and results/findings.

Third, *theoretical* articles (n = 188) were reviewed for definitions of key constructs related to resiliency and youth development. Using existing conceptual frameworks/models and terminology from Benard (1991, 2004) and Pittman and Cahill (1997) as a foundation, operational definitions for important constructs were confirmed and/or expanded. Since the purpose of this study was to develop valid and reliable measures of perceived personal and social competence, operational definitions for those subscales are found in Table 2.

Fourth, existing measurement instruments related to key constructs under study were identified. In addition to instruments measuring one or more health/education outcomes, more than 100 instruments or subscales related to youth development competencies were used in descriptive, correlational, quasi-experimental, or other empirical studies reviewed in the content analysis. Identified measurement instruments included items of subscales assessing: (a) individual characteristics/competencies, (b) family characteristics, (c) school characteristics, and (d) peer/community characteristics.

Since this study focused on perceived personal and social competence, only instruments related to individual characteristics (n = 27) (e.g., self-concept, self-esteem, locus of control, well-being, autonomy) and personal and social competence (n = 12) (e.g., coping skills, social competence, problem-solving skills, ability to make judgments) were examined. Across selected measurement instruments, considerable overlap existed depending on operational definitions used and actual items included. Whenever possible, psychometric information related to each instrument (i.e., validity and reliability studies) as well as specific items, response options, and coding procedures were acquired. In

Table 1

Literature Review Keyword Search

Category	Keywords
Health behaviors/outcomes	alcohol, drug, exercise, fitness, tobacco, nutrition, physical activity, pregnancy, safety, sexuality, suicide, violence
Outcomes of education	academic achievement, academic performance, academic success, attendance, attitudes toward school, dropout rates, grade point average, graduation rates, truancy rates
Protective factors	community attitude, community influence, community involvement, community relations, community service, community support, family influence, family involvement, family structure, family relationship, peer involvement, peer support, role models, school activities, school adjustment, school effectiveness, school environment, school involvement, school support, school vandalism, social networks, social reinforcement, social support
Resiliency	achievement motivation, autonomy, future planning, identity, problem-solving, resilience, self-actualization, self-control, self-esteem, self-efficacy, social competence
Youth development	career planning, citizenship, cognitive ability, cognitive development, creative expression, interpersonal competence, locus of control, service learning, vocational education

Table 2

Definitions of Youth Development and Personal and Social Competence Key Constructs

Construct	Definition
Youth Development	An ongoing process in which individuals are engaged in seeking ways to meet their personal and social needs, and build skills and competencies that will allow them to function effectively and efficiently in their daily lives.
Competence	A pattern of effective adaptation to one's personal and social environment to provide reasonable success related to major development tasks for a given age and gender with specific domains of achievement.
Personal/Social Competence	Ability and motivation to respond affirmatively to oneself and his/her surrounding social systems; sub-constructs of personal/social competence include intrapersonal skills, interpersonal skills, coping skills, and judgment skills.
Intrapersonal Skills	Understands and is able to deal with emotions; practices self-discipline.
Interpersonal Skills	Works well with others, develops friendships and relationships through communication, cooperation, empathizing, and negotiating.
Coping Skills	Has ability to adapt and be flexible; assumes personal responsibility for one's actions.
Judgment Skills	Plans and evaluates situations; makes health-promoting decisions; is able to use problem-solving skills appropriately.

Note: Source: Pittman & Cahill, 1992

cases where psychometric information about the instrument was not published, authors were contacted to secure copies of instruments and results of any validity and reliability studies.

Establishing Content Validity

Based on results of the content analysis of empirical and theoretical studies, concise operational definitions of subconstructs of intrapersonal, interpersonal, coping, and judgment skills were delineated (see Table 3). After reviewing existing instruments, a pool of related items was compiled.

Researchers/practitioners involved in youth development programming were identified. Invitations to participate in a Delphi study were sent to 13 practitioners and 14 researchers. Initially, 12 professionals (5 practitioners/7 researchers) agreed to participate. After receiving Institutional Review Board approval, participants of Round 1 of the Delphi study were sent a packet including: an informed consent letter, a spiral-bound booklet with a set of directions, a professional background form, four color-coded sections providing operational definitions of subconstructs, proposed Likert-type scoring, and proposed items. Panel members were asked to rate each item (retain, delete, or revise). Space was provided for additional comments about each item. Delphi panel members also were given an opportunity to propose additional items to each subscale based on their experience. Nine participants (75%) returned their responses to Round 1 of the Delphi study. Delphi panel members included individuals who had been actively working in the field of youth development: a health scientist from the Centers for Disease Control and Prevention, a director of research from a national non-for-profit organization, an epidemiologist specializing in social determinants of health among youth and adolescents, an executive director of a community-based organization serving children and youth, health education specialists from two state departments of education, and professors of health education from three universities.

Responses of Delphi panel members in Round 1 were compiled. A second spiral-bound booklet was developed

Table 3

Definitions of Perceived Personal and Social Competence Subscales

Coping Skills Assessment: 5 Subscales (68 Items)	
Adaptability Scale (6 items)	Perceived ability to adapt to everyday hassles and changing situations. (e.g., When I find it hard to do something, I look for ways to accomplish it.)
Stress Response and Reaction Scale (21 items)	Perceived ability to identify stress and correctly act to control stress. (e.g., I feel in control in difficult situations.)
Support Systems and Resources Scale (15 items)	Perceived ability to identify and use friends and others for support. (e.g., My family gives me the moral support I need.)
Time Management Scale (6 items)	Perceived ability to manage time consistent with personal priorities and values. (e.g., I can change my priorities when I need to do so.)
Stress Management Scale (20 items)	Perceived ability to control stress. (e.g., By changing my way of thinking, I can change how I feel.)
Interpersonal Skill Assessment: 4 Subscales (65 Items)	
Developing and Maintaining Relationships Scale (29 Items)	Perceived ability to develop trust, honesty, and social support in relationships. (e.g., I know someone I can really count on.)
Communication Skills Scale (13 Items)	Perceived ability to communicate, including assertiveness and refusal skills. (e.g., I can say what I mean without hurting others' feelings.)
Conflict Resolution Scale (13 Items)	Perceived ability to be flexible, open to other's suggestions, and recognize importance of negotiation. (e.g., I am willing to consider all sides of an argument.)
Empathy Scale (10 Items)	Perceived level of understanding others through sympathy, compassion, and sensitivity. (e.g., I am concerned when my friends are sad.)

Note: Source: Fetro, 2000

Table 3

Definitions of Perceived Personal and Social Competence Subscales (continued)

Intrapersonal Skill Assessment: 9 Subscales (115 Items)	
Sense of Hope, Purpose, and Future Scale (18 Items)	Perceived life's direction and the ability to have positive outlook and positive beliefs toward future outcomes. (e.g., I expect to succeed in life.)
Self-Concept Scale (7 Items)	Perceived sum total of beliefs about personal attributes. (e.g., I am a good person.)
Self-Esteem Scale (22 Items)	Perceived satisfaction with self. (e.g., I am proud of my accomplishments.)
Understanding Emotions Scale (17 Items)	Perceived level of awareness of feelings and emotions. (e.g., I know what makes me happy.)
Self-Discipline Scale (8 Items)	Perceived level of control over one's behaviors. (e.g., I stick with tough tasks until I finish them.)
Locus of Control Scale (13 Items)	Perceived level of personal control. (e.g., I can do things I set my mind to do.)
Personal Responsibility Scale (11 Items)	Perceived level of personal accountability for one's actions. (e.g., I complete school assignments on time.)
Autonomy and Independence Scale (13 Items)	Perceived level of control or restrictions by parents or family. (e.g., I can disagree with my parents as long as I do it with respect.)
Value System Scale (6 Items)	Perceived level of rules, standards, and norms to regulate behavior. (e.g., I stand up for what I believe even when it is unpopular to do so.)
Judgment Skill Assessment: 5 Subscales (36 Items)	
Defining Problem or Issue Scale (6 Items)	Perceived ability to recognize a problem or issue. (e.g., I know when I am having a bad day.)
Predicting Outcomes or Consequences Scale (4 Items)	Perceived ability to specify desired results. (e.g., I know my actions affect others.)
Identify Potential Alternative Solutions Scale (7 Items)	Perceived ability to identify potential solutions for desired results. (e.g., When I have a problem, I think about how I solved a similar one.)
Goal Setting Scale (11 Items)	Perceived ability to develop a plan following a systematic and logical approach. (e.g., I can identify barriers to reaching my goals.)
Assessing Information and Resources Scale (8 Items)	Perceived ability to access information to meet one's needs, and assess validity/ reliability of resources. (e.g., I am aware of available resources at school.)

Note: Source: Fetro, 2000

to reflect panel members' assessment of whether to retain, delete, or revise specific items (i.e., percentage of panels members). It also included all suggestions for revisions as well as proposed new items. Panel members were directed to review all information provided and re-assess each item. Items that received agreement by 8 of 9 Delphi panel members were retained. Content validity of four scales to measure perceived personal and social competence was established through this process (i.e., intrapersonal skills [9 subscales, 117 items], interpersonal skills [4 subscales, 65 items], coping skills [5 subscales, 70 items], and judgment skills [5 subscales, 40 items]).

Panel members agreed unanimously on the survey directions: "For each statement below, please select the choice that best describes you." The five-point Likert-type scale measured "how often" (i.e., almost never [less than 5% of the time], seldom [about 25% of the time], sometimes [about 50% of the time], often [about 75% of the time], and almost always [about 90% of the time]).

Re-examining the Published Literature on Youth Development

Before conducting the reliability studies, the current

literature related to youth development from 1999—present was reviewed. A computerized library search of ERIC, PsychInfo, and the Cumulative Index to Nursing and Allied Health Literature (CINAHL) using the keywords *youth development* and *research* yielded 256 citations; the majority of these research studies were about program development rather than instrument development. The addition of the words *instrument* and *scale* yielded 20 citations. These instrument development studies were reviewed to determine if any new valid and reliable instruments had been developed to measure Pittman and Cahill's (1992) four constructs of personal and social competence. Similar to the earlier review, although many instruments or scales measured some aspect of personal and social competence, no comprehensive measurement tool addressed most or all the subconstructs of personal and social competence.

Establishing Readability

Since these personal and social skill scales and/or their subscales could potentially be used by researchers, program planners, and/or evaluators of youth development programs for youth (10-18 years old), the Gunning Fog Index, an indication of the number of years of formal education required to easily understand text at first reading, was calculated (http://www.online-utility.org/english/readability_test_and_improve.jsp retrieved March 2, 2010). For the four subscales measuring perceived personal and social competence, the following indices were calculated: intrapersonal skills (3.82), interpersonal skills (4.62), coping skills (4.34), and judgment skills (6.43).

Establishing Internal Consistency Reliability

To establish internal consistency reliability (Cronbach alpha), a sample of convenience of undergraduate students enrolled in an introductory personal health course at a large, Midwestern university (n=499) completed one of four surveys. Matrix sampling was used so that approximately one fourth of the student sample completed each survey: intrapersonal skills (n = 123), interpersonal skills (n = 130), coping skills (n = 129), and judgment skills (n = 117). Surveys were printed on four different colors of paper and collated so that every fifth survey was identical. After Institutional Review Board approval for the reliability study was received, multiple data collectors were trained related to the research protocol. Surveys, with an attached cover letter, were distributed to the first person at the beginning of every row. Participants were instructed to take the survey on top and pass the remaining surveys to the next person. Scantron® forms and pencils were distributed for recording student responses. Participants used the cover letter to conceal their responses to survey items, if desired. When all students were finished, they placed their completed surveys in a manila envelope, which was sealed by the data collector and returned to the primary researcher for data analysis. Data from 436 properly completed surveys (87.4%) were analyzed using Statistical Package for the Social Sciences (SPSS) 17.0. Cronbach alphas for perceived personal and social competence scales were as follows: intrapersonal skills (.96), interpersonal skills (.91), coping skills (.89), and judgment skills (.91).

Discussion and Recommendations

Development of valid and reliable measures of perceived personal and social competence (i.e., intrapersonal, interpersonal, coping, and judgment skills) that could be used by program planners and/or evaluators of youth development programs is critical. As stated earlier, the need to focus youth programming on developing skills versus disseminating knowledge is well-documented. Although a plethora of instruments measuring one or more subconstructs of personal and social competence are available, to date, an inclusive instrument measuring multiple constructs of personal and social competence does not exist. Program planners and evaluators could use all four scales (i.e., intrapersonal, interpersonal, coping, judgment skills) to assess short-term impact of their youth development programs.

A major limitation to using all four scales together, however, would be instrument length (284 items). If program planners/evaluators opt to use all scales to determine program effectiveness, it is recommended each scale be administered separately to reduce the amount of time participants would need to complete survey items. Or, similar to this reliability study, matrix sampling could be used if a larger sample is available. However, even with this approach, depending on age, it could still take participants more than 30 minutes to complete each scale. The largest scale (intrapersonal skills) includes 115 items. Length of individual scales was a limitation in this study and may have prevented some students from completing surveys or may have led students to mark responses without thinking. Further refinement of these scales should include a factor analysis, which could lead to elimination of items that do not contribute significantly to interconnections among items. Consequently, a shorter more user-friendly survey could be created.

Another possible approach to using all perceived personal and social competence (PSC) scales to evaluate programs would be to match program components and objectives with one or more PSC scales or use specific subscales from PSC. This approach would not only decrease the number of items used, but also would tailor the survey and eliminate unnecessary items. However, since internal consistency reliability was computed on the four larger PSC scales rather than individual subscales, Cronbach alpha results would not extend to use of selected items of perceived personal and social competence scales. Researchers using specific sections of PSC scales will need to calculate internal consistency for subscales selected.

This instrument was designed to be developmentally-appropriate for adolescents (ages 10-18 years old). To date, however, PSC scales have only been tested with a college-aged sample, predominately aged 18 and 19 years old. Although researchers believe the scales would be appropriate

for younger adolescents, this assumption has not been confirmed. Results of the Gunning Fog Index verify that reading level of all scales was less than sixth grade. Further research with younger groups is warranted. Length of some items and/or specific wording of individual items may need to be changed based on pilot testing with younger youth.

Researchers have identified three broad uses for the perceived personal and social competence scales. First, one or more scales could be used as a needs assessment. Community-based organizations, such Boys and Girls Club, could use this instrument to assess skill levels of youth to inform program development. Based upon results of the needs assessment, programs that address life skills in general or more targeted programs focusing on stress management, communication, goal-setting, or anger management may be introduced. Further, middle and high school teachers could use these scales to determine students' perceived skill level and guide their selection of curricula to be used in personal health or life skills classes. One or more PSC scales could be used to determine priorities for content and instructional strategies to be used in middle school advisory classes. School counselors could select sections to use with students needing personal and social skills development.

Post-secondary institutions could use results of a needs assessment to determine specific skills that should be addressed during the first year experience, within core curriculum classes, or in a personal health course. Also, seminars could be delivered by student health services or wellness staff to address specific skills or small group counseling could be offered based upon results (e.g. anger management groups). More specifically, organizations offering individualized counseling services could use the personal and social scale on an individual basis to determine individual counseling needs.

Second, these PSC scales could be as an evaluation tool. Since "best practice" in health education, includes building personal and social skills (CDC-National Center for Chronic Disease Prevention and Health Promotion, 2008), it would be appropriate to determine the effectiveness of a health education course in building these skills. The personal and social competence scale could be administered at the beginning and end of such a course and differences in pre- and post-scores could be compared to determine course effectiveness and address future needs. Also, specific scales or subscales could be used to evaluate programs or seminars focusing on specific skills. Community organizations, elementary and secondary schools, post-secondary institutions, and any other group that addresses adolescents' personal and social skills could use this instrument as an evaluation tool with a quasi-experimental pre/post measure design.

Third, one or more of the PSC scales could be used in research studies seeking to determine relationships among perceived personal and social skills, health-risk behaviors, and educational outcomes (e.g., student grade point average). In addition to simpler correlational designs, researchers could employ predictive designs to determine which of the PSC scales accounts for the most variance in student grade point average.

In summary, since the National Health Education Standards (JCNHES, 2007) and Health Education Curriculum Analysis Tool (HE-CAT) (www.cdc.gov/HealthyYouth) both focus on personal and social skill development, valid and reliable assessment measures that could be used in health education classes, other school-based programs, and community-based programs are essential. Future research with these scales and other similar scales with allow practitioners to determine if instructional strategies incorporated in their programs are effective.

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