STRUCTURED EVALUATION METHOD FOR FAMILY ASSESSMENT TOOLS: EVALUATION OF THE FAMILY APGAR

MÉTODO DE AVALIAÇÃO ESTRUTURADA COMO INSTRUMENTO DE ASSISTÊNCIA FAMILIAR: AVALIAÇÃO DO APGAR FAMILIAR

MÉTODO DE EVALUCIÓN ESTRUCTURADA COMO HERRAMIENTA PARA EL CUIDADO FAMILIAR: EVALUACION DEL APGAR FAMILIAR

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ABSTRACT: The importance of family assessment tools to the practicing family practice clinician cannot be stressed enough. Models are less practical than assessment tools and inventories in clinical practice. A structured method to evaluate assessment tools is presented. The Family APGAR is assessed using this method to demonstrate its usefulness to the family practice clinician. The intent of the structured method of evaluating each tool is to facilitate both the choice of a family assessment tool by the clinician and in the teaching of family assessment to those who use a family focus in their clinical care of patients.

KEY WORDS: Family APGAR, assessment tools, evaluation

RESUMO: A importância de instrumentos de avaliação para o praticante da prática clínica de família não tem tido a ênfase suficiente. Modelos são menos práticos do que seus instrumentos e inventários na prática clínica. Um método estruturado para avaliar instrumentos de avaliação é apresentado. O APGAR Famíliar é avaliado usando este método para demonstrar sua utilidade ao clínico da prática de família. A intenção do método estruturado de avaliar cada instrumento é facilitar a escolha de um instrumento para avaliação da família pelo clínico e no ensino da avaliação da família àquelas que usam a família como foco no cuidado clínico de seus pacientes.

PALAVRAS-CHAVE: APGAR da Família, herramienta de evaluación, evaluacion.

RESUMEM: La importancia de tener instrumentos de evaluación para la practica clínica de la familia, no ha tenido el énfasis suficiente. Los Modelos son menos prácticos que sus instrumentos e inventarios en la práctica clínica un método estructurado para evaluar esos instrumentos. El APGAR Familiar es evaluado usando este método a fin de mostrar su utilidad al clínico de la práctica de familia. La intención del método estructurado de evaluar cada instrumento es facilitar la elección de un instrumento que empleado por el clinico sea aplicable a la familia y en el enseño de la evaluación de la familia la colocan como foco en el cuidado clínico de sus pacientes.

PALABRAS-CLAVE: APGAR de la Familia, instrumento de evaluación, evaluación

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STRUCTURED EVALUATION METHOD FOR FAMILY ASSESSMENT TOOLS: EVALUATION OF THE FAMILY APGAR

The importance of family assessment tools to the practicing family clinician cannot be stressed enough. Ten years ago, however, Smilkstein[1] noted that in 20 years of trying to teach a family approach to health care practitioners, it was still a "difficult task" (p.28). The same could be said today. While physical assessment is a well established procedure used by man health care providers, a psychosocial assessment can be time consuming and less exact. Even more troubling is deciding how to assess the family system. Who is part of that system and what effect the family has on a patient can be enigmatic. Family function is complex and difficult to study according to Fisher[2]. Since family dynamics cannot be "explained chemically" the study of the family is still, at best, an inexact science.

To aid in the assessment of families, various systems of evaluation have evolved. These systems can range from elaborate conceptual models to simple scales and tools that short cut the process of getting to know the complexities of the patient in the context of family life. Since office visit time is limited, simple tools can be adopted by busy practitioners. Like those used for physical assessment, the tool must follow a logical order, be practical and provide the most salient information in the shortest possible time.

The use of standardized tools is not universal by family practitioners. Bray[3] has suggested there is no consensus related to theories of family function; hence, clinicians may be reluctant to use standardized tools. Two other reasons offered were practitioner perception that structured assessment methods have little utility in clinical practice and the fact that most instruments for family assessment were developed as research tools, not necessarily for clinical practice. While there is validity to these arguments, the assumption made here is that tools serve the clinician. A well developed tool can save time by identifying issues that may have an impact on the patient's health. With that in mind, a specific tool that offers this promise will be evaluated here. A structured method to evaluate such tools will be presented to help busy clinicians decide which tool applies to his or her unique practice. The focus for evaluation will be primarily on how the tool fared in research designed to assess its use in clinical practice, rather than on how it holds up as a research instrument. The structured method developed to evaluate each tool can also be used by educators to teach student family clinicians what to look for in a clinically useful family assessment tool.

AVAILABLE TOOLS AND MODELS

There was a time when incorporating the family into the care of one of its member was the standard. In 1948, Richardson reportedly stressed the necessity of physicians viewing the patient in the context of family[4]. A focus on the family by a group of practitioners, known as "family clinicians", took on greater significance in the early 1970s, when specialty practice was on the rise and the practice of family medicine emerged[4]. This group includes family practice physicians and family nurse practitioners. Pediatricians and pediatric nurse practitioners, by virtue of the nature of their work, might find family assessment tools of value as well. Use of standardized assessment tools by home care nurses has been explored[5].

Most nursing assessments are derived from a theory or model. The Calgary Family Assessment Model (CFAM) provides an in depth assessment of the family. Family composition, gender, rank order, subsystem and boundary are evaluated by this tool. Five categories of families are defined, recognizing societal changes toward non-traditional family composition. Open-ended interview questions are included. These provide multiple opportunities for descriptive assessment including expectations regarding gender roles, family subsystems and boundaries[6]. While potentially useful, the information called for on the assessment tool may be too extensive for practical clinical use. The Neuman Systems Model (NSM) views an individual holistically, with a focus on the environment. According to Neuman[7], a person's environment is composed of several variables, only one being the family. Neuman defined family as a group of two or more persons

who maintain a common culture. There is no specific assessment tool in this model. The assessment guide offered by Neuman, while useful for directing an interview, is not practical for clinical use in a busy office practice. The Friedman Family Assessment Model (FFAM), developed in the 1980s, synthesized general systems theory, family development theory and cross-cultural theory[8]. These models prove less useful in clinical practice. While they contain guidelines for interviewing, these are often subjective and require long narrative. Short, easy to complete, assessment tools have more promise as functional and practical adjuncts in clinical practice.

The McCubbin "inventories" for research and practice are discussed in great detail in Family Assessment: Resiliency, Coping, and Adaptation, Inventories for Research and Practice[9]*. The usefulness of the McCubbin model is that it offers a variety of screening tools, or inventories, for a diversity of clinical situations. Among the instruments that McCubbin and colleagues have developed for both research and practice are: Family Inventory of Life Events (FILE), Family Environment Device (FAD), Family Coping Strategies (F-COPES). The structured method developed by McCubbin and colleagues to evaluate their compilation of inventories has been adapted and revised to create the structured method on which the APGAR is evaluated in the next section (see Annex).*

STRUCTURED EVALUATION OF THE FAMILY APGAR

The structured evaluation method developed for family assessment tools will be used to evaluate the Family APGAR. Each of the areas for evaluation is reviewed below under the results noted in the section.

Name of Tool:

The Family APGAR was developed in 1978. The name has remained the same since that time. There have been a few revisions made over the years. These will be described below.

Author:

Gabriel Smilkstein, a family physician, developed the scale and first introduced it in the publication cited below.

Source: *The original publication was* The Journal of Family Practice, *6 (6), 1978x. There are many publications by the developer and others since that time. Some of these are noted in the references for this article.*

OVERVIEW (PURPOSE AND DESCRIPTION)

The Family APGAR is a useful instrument to provide reliable family information. Smilkstein defined the family in terms of commitment and the sharing of resources such as time, space and finances. A family in the context of this Family APGAR, then, is "a psychosocial group consisting of the patient and one or more persons, children or adults, in which there is a commitment for members to nurture each other"[4:10].

The Family APGAR assessment tool is comprised of 5 questions that assess the patient's satisfaction with current family function and support provided by his/her family. The five items are related to the following components of satisfaction with family function: **A**daptability, **P**artnership, **G**rowth, **A**ffection, and **R**esolve. One response format is a five-point Likert type scale ranging from strongly agree to strongly disagree. In another response format three choices are provided: 0 = almost always, 1 = some of the time and 2 = hardly ever. Its introduction into practice was designed to provide a quick assessment of family functioning for the practicing physician[4]. Modifications of the tool for use in clinical practice and in research have been made over the past 25 years.

DEVELOPMENT AND EVOLUTION OF THE FAMILY APGAR

The tool developed by Smilkstein was designed to elicit a database that accurately reflected a patient's view of the functional state of his or her family. The APGAR acronym was applied since it was felt that physicians were familiar with the APGAR assessment of newborns and it would encourage them to remember something with a similar format. This five item questionnaire was developed on the premise that a family member's perception of family function could be assessed by a member's report of satisfaction with five parameters of family function:

adaptation, partnership, growth, affection, and resolve. The instrument allows three possible responses (0-2) to each of the five items. Scores can range from 0 to 10. Studies of several populations by the tool's originator provided supportive evidence that the tool was a reliable, validated, utilitarian instrument that measured what it was designed to measure[11].

TOOL EVOLUTION AND REFINEMENT

Hillard and colleagues[12] acknowledged the Family APGAR as measuring a patient's "satisfaction with family responsiveness to need" (p.345). They found it did not fare as well as the Personal Inventory in its predictive accuracy. They revised the tool for research purposes to include 9 rather than a three or five scale.

Murphy and colleagues[13] also found that the Family APGAR did not stand well alone as a screening tool for child psychosocial problems. The APGAR did identify children/adolescents from families with low social support who were not currently receiving services and who had not been recognized by physicians. They reasoned that patients who were more vulnerable due to contingent factors, such as low social support, correlated with higher symptom scores on Pediatric Symptom Checklist (PSC), possibly indicating psychosocial symptoms not yet identified with psychosocial dysfunction.

A revised Family APGAR for use by 8-year olds has also been developed. Ten years before the study by Murphy and colleagues, a team from Indiana University researched use of the tool, making it understandable for children as young as 8 years old[14].

Reliability: Several studies have demonstrated internal consistency (see Table 1 – Reliabilities Estimates). Administration of the Family APGAR to college students (average age, 19.7 years) provided initial reliability data (see table 1). Chronbach's of 0.80 or greater are consistently reported, with the use of the 5-choice format yielding higher internal consistency. No significant differences were found between the scores of men versus women[11; 15].

Using a population of 8 to 12 year olds in which one-half to one-third had learning problems, Austin & Huberty[14] revised the scales to accommodate those who could read at second-grade level. This revised Family APGAR for those with a second-grade reading level had lower, but acceptable Chronbach's of 0.68-81. The first study reported by these authors included children with epilepsy or asthma from outpatients in a large medical center. The second larger study included children with the same diagnosis; however, the population was equally divided between patients from outpatient clinics and from private physicians. Support for the reliability and validity of the revised Family APGAR was found for use with this youthful population.

TABLE 1 – RELIABILITY ESTIMATES

Author	Year of pub	Popula-tion	Population type (description)	Internal consistency	Pearson's *r*interrater reliability	Other
*Good, et al. [15]	1979	N=38	Non-clinical-comparison of FFI with APGAR		r=0.80	
		N=20	Mental health outpatients-comparison with therapist's ratings		r=0.64	
Smilkstein, et al. [11]	1982	N=529	College students, male/female (3-choice format)	(Chronbach's) 0.80		
		N=486	College students, male/female (5-choice format)	(Chronbach's) 0.86		
		N=2,541 [100 retested]	10-13 year olds			Test-retest 0.83
Hillard, et al. [12]	1986	N=150	Lower SES patients in a family health center (M/F & obstetric clients)			Mean dif of symptomatic vs nonsymtomatic P< 0.01; F =11.96
Austin, & Huberty [14]	(1st study) 1989	N=50	Revised & original to 8-12 yrs olds);administered twice, both versions	(Chronbach's)Original 0.70 & 0.81 Revised 0.71 & 0.68	Orig r=0.72 Rev r=0.73	
	(2nd study)	N=250	Revised version only to sample with mean age 10.35 yrs (8-12 yrs)	(Chronbach's) 0.70		
Gardner, et al. [15]	2001	N=21,285	Office based visits-internal consistency	(Chronbach's) 0.85		
		N=1146	Office based visits-looking for stability over 6 months			Kappa= 0.24

Validity: The initial validity of the Family APGAR (**A**daptability, **P**artnership, **G**rowth, **A**ffection, and **R**esolve) was established through correlation with a previously validated tool, the Pless-Satterwhite Family Function Index (FFI) (see Table 2 - Validity Estimates). The reliability of the FFI was established by comparing index scores with rating of the same families by experienced case workers[4]. Smilkstein and colleagues[11] reported an APGAR/FFI correlation of 0.64. In addition, estimates of family function were correlated with practicing psychotherapists for the Family APGAR; however, no reliability correlations were reported. These researchers reported significantly higher scores on the Family APGAR in married graduate students than in community mental health clinic patients; However, level of significance was not indicated. In a larger study done by researchers at the National Taiwan University in Taipei, Smilkstein and colleagues[11] reported significantly lower family APGAR scores for adopted children and children separated from one or both parents. Gardner and colleagues argued, however, that it "seems unlikely that families who adopt are more dysfunctional than other families"[15:20].

In a study evaluating the validity of the Family APGAR and the Personal Inventory, Hillard and colleagues[12] found that the tools used in tandem identified 90 percent of patients with psychological problems. Patients were assessed on both tools and outcome variables were evaluated after 18 months. Two levels of psychosocial symptoms were delineated-clear symptoms and suggestive symptoms. The means of the Family APGAR for non-symptomatic patients were compared with that of patients with suggestive or clear symptoms. Analyses of variance indicated that this difference was statically significant ($P<0.01$; $F=11.96$)

Murphy and colleagues[13] reported low Kappa scores for correlations between the Family APGAR and physician recognition and between Family APGAR and the Pediatric Symptom Checklist (PSC). They asserted that the Family APGAR is not sufficient to stand alone as a screening tool for child psychosocial problems. In a large study they found it not a sensitive measure of a child's current psychosocial problems. Agreement between the Family APGAR and the Pediatric Symptom Checklist (PSC) was low (Kappa-0.24). Agreement between APGAR & physician recommendation was lower (Kappa-0.14) still. There was, however, a correlation with low social support and other risk factors for psychosocial problems in children and adolescents. Smucker[17], finding that physician perceptions did not correlate with family APGAR scores ($k=0.23$), believed that the family APGAR was better as a supplement to usual clinical methods for the detection of psychosocial problems in children.

Acknowledging the statistically significant differences of means between the groups Good[15] studied, Gwyther and colleagues[18] found the same relationship may not hold true for other populations, questioning the construct validity of APGAR to measure family functioning in a population of patients with irritable bowel syndrome (IBS) who also display high test taking defensiveness. The Family APGAR did not identify IBS patients nor distinguish these patients from a group of control subjects. Despite misgivings about the validity of the Family APGAR especially with low sensitivity to enmeshed families, it has been used extensively in clinical studies[19,5,20,21].

TABLE 2 – VALIDITY ESTIMATES

Author	Year of pub	Population	Population type (description)	Type of validity	Results
Smilkstein, et al. [11]	1982	N=38	Non-clinical	Construct APGAR/FFI	0.64
		N=20	Community MH patients/married grad students	Concurrent	0.64
Hillard, et al. [12]	1986	N=150	Symptomatic patients vs non-symp	Concurrent-anal of variance APGAR/PI	Identified 90% of patients with psych prob P< 0.01
Gwyther, et al. [18]	1993	N= ?	Patients with IBS	Construct	
Hilbert [20]	1993	N=36	Couples/one with MI	Concurrent	r=0.526 r=0.503
Smucker & colleagues [17]	1995	N=152			Kappa=0.23
Murphy, et al. [13]	1998	N=9626	Parents (single and married) with children 4-15 years old	Concurrent APGAR/PSC Predictive of future sociological Problems in adolescents?	Kappa: 0.14-APGAR & physician rec 0.24-APGAR & PSC
Chao, et al. [19]	1998	N=	Family practice patients	Criterion Freq of visits/less satisfaction with family function	r=?
		N=	Family practice female head of household (HOH)	Predictive female HOH perception/outcomes	
Greenwald, et al. [23]	1998	N=		Criterion/Predictive Chest pain higher correlation	

Use of instrument for research: Use of the 5-choice format is recommended when this tool is used in research designs as it yielded a greater internal consistency. As early as 1988, Mengel[22] questioned the usefulness of the Family APGAR in a research setting. Noting that the family APGAR is really a measure of a patient's satisfaction with the family situation rather than true "family functioning" as the primary reason, Mengel[22] saw problems with the self administered aspect of the questionnaire which makes it subject to biases of the individual who completes it, including test-taking defensiveness, as noted by Gywther and colleagues[18]. Gardner and colleagues[15] argued that the use of the Family APGAR as a measure of family functioning may not be warranted, as there is a low correlation with other measurements. The initial introduction of the Family APGAR into practice, however, was primarily as an assessment of perceived adult satisfaction with family support.

Hilbert (20) found agreement between couples to be high for satisfaction with family function (r=0.526) and positive affect (r=0.503). These findings were significant (p=0.01) for couples where one member had experienced a myocardial infarction (MI). The results of this study indicated that both MI patients, and spouses of cardiac patients, experience considerable distress, with patient faring only slightly better than spouses. Satisfaction with family function may be a mediating factor.

Chao and colleagues[19] reported lower individual APGAR scores (indicating poorer satisfaction with family function) were significantly correlated with a greater number of visits to the Family Practice Center, the site of their research. In addition, they reported that the female head of household assessment of family functioning had better correlation with family outcomes measured using information from other family members including aggregate measures, although the sample size was admittedly low. In another study where the Family APGAR served as an adjunct measure to predict high utilization in a family practice, increased dysfunction was found to be related to increased office service utilization and an increased number of symptoms[23]. Noting that the Family APGAR is primarily a measure of family satisfaction, these researchers affirmed that it served to distinguish those patients with a tendency to have more visits for such symptoms as non-obstetrical gynecological symptoms, ill-defined systems and chest pain. All of the three tools used correlated with the first two symptoms, only the Family APGAR was correlated with chest pain.

Use of instrument in clinical practice: Use of the 3-choice option is preferred for clinical use due

to its simplicity. Internal consistency is preserved. Its use as a measure of family support is more justified than its use to measure family dysfunction. According to Gardner and colleagues[15], their data does not support use of Family APGAR as a measure of family dysfunction in the primary care setting, as disagreements often existed between the Family APGAR scores and clinician judgment. Austin and Huberty[14] recommended use of the revised Family APGAR to allow for independent ratings of family functioning by younger children, facilitating a way to capture the child's perception of the family. Conceivably, use of the Austin and Huberty pediatric Family APGAR with a child, in tandem with the original APGAR for the parents, could yield a better picture of family perceptions of mutual support.

DISCUSSION

One of the authors has had extensive experience with the use of the family APGAR. Her opinion is that the use of the tool in practice as a screening for potential problems in the family is invaluable, and should precede the use of more extensive diagnostic instruments. She has taught nurse practitioner students and other primary care providers how to use the tool. Many have given good feedback on its use as a quick screening in practice. The second author has limited experience in practice with the tool, but is interested specifically in expanding its use with pediatric and adolescent patients. The final author, whose interest in this tool is primarily of its documented use as a research instrument, views the evidence as demonstrating that alone, the family APGAR is not a sensitive indicator of family dysfunction. According to Smilkstein, the tool's author, the original design of the tool was to assess family "satisfaction" with function, which is not the same thing[1,4]. Mengel has acknowledged this as well[22]. Future use of the Family APGAR in research should be designed to employ the tool as intended that is to evaluate the participant's perception of satisfaction with family function. In a two step process, then, this could be correlated with responses on tools designed to look at family function.

CONCLUSION

The Family APGAR should be interpreted judiciously with children[13,17]. Murphy and colleagues[13] recommended the Family APGAR as an easy-to-use tool to assess social support and facilitate discussion of these issues with high-risk families for pediatricians and family physicians, yet questioned its sensitivity to current problems. The APGAR identified children/ adolescents from families with low social support who were not currently receiving services and who had not been recognized by physicians. The low results may herald future risk, as higher psychological dysfunction risk factors are associated with APGAR social support rating (for example, minority and single parenthood).

While reporting on a small sample size, the use of the easily administered instrument facilitated a comparison between the home care nurses' perceptions and those of family and patient[5]. Surprised by the disparate findings, these authors felt that the use of the structured family assessment was too much for a first time nursing home visit, and would be better suited for longer term cases requiring a case manager.

Acknowledging that the Family APGAR measures a patient's "satisfaction with family responsiveness to need" (p.345), Hillard and colleagues[12] found it did not fare as well as the Personal Inventory in its predictive accuracy. These researchers recommended the use of these tools in tandem in clinical practice. The Family APGAR may be sensitive to aspects of family functioning different from than those detected by routine clinical methods, making it a useful adjunct in clinical practice[17]. So while the Family APGAR serves the clinician as a valuable screening tool, it serves the best in conjunction with other tools where it can direct the clinician to explore specific problems with the client.

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ANNEX

EVALUATION OF ASSESSMENT TOOL TEMPLATE

Name of tool:

Author(s):

Source:

Overview (Purpose and description):

Development of the tool:

Reliability:

Author	Year of pub	Population	Population type (description)	Internal consistency /method	Stability /method
		N=			
		N=			
		N=			

Validity:

Author	Year of pub	Population	Population type (description)	Type of validity	Results
		N=			
		N=			

Use of instrument for research:

Use of instrument in clinical practice:

Other:

References: