

# The SAGE-PAGE Trial: Do Family Genograms Make A Difference?

John C. Rogers, M.D., M.P.H., and Michael Robrbaugh, Ph.D.

**Abstract: Background:** Despite enthusiastic promotion of family genograms, the impact of routine use of this tool on clinical practice has not been systematically examined. The present study investigated whether doing a genogram, or having one available, makes physicians more sensitive to psychosocial issues or in other ways affects the physician-patient relationship or the process of clinical care.

**Methods:** In a randomized clinical trial, patients visiting 5 physicians at an academic family practice center (n = 189) received a physician-administered genogram (PAGE); a self-administered genogram (SAGE), which the patient completed before seeing the physician; or no genogram. A fourth (baseline) group was tested without genograms prior to the randomized trial.

**Results:** Analyses of patients' and physicians' postencounter questionnaires showed no impact of genograms on how physicians think about and deal with clinical problems or how patients view the encounter with their physicians. Compared with control groups, neither patient- nor physician-administered genograms increased the physician's (self-defined) understanding of the patient or the importance the physician attached to psychosocial issues in the case. A positive finding was that physicians considered genograms more relevant when they did them themselves. On the other hand, physician-administered genograms also increased the length of the encounter and were substantially less complete (conveying less information) than genograms completed by patients.

**Conclusions:** The results leave open the possibility that genograms do make a difference when used routinely by residents or experts or in difficult cases when family assessment is indicated. While enthusiasm about genogram applications in family medicine is understandable, the clinical utility of this tool remains to be demonstrated scientifically. (J Am Board Fam Pract 1991; 4:319-26.)

The family genogram has been promoted as a useful and versatile tool for practicing family-oriented care.<sup>1-6</sup> Genograms are said to help physicians think "systemically" about a patient's complaint, taking into account the broader (psychosocial) context.<sup>1-6</sup> Use of this tool presumably improves diagnosis by illuminating etiologic or problem-maintaining aspects of a patient's family situation<sup>1-5</sup> and improves management of chronic health problems by helping the physician identify family factors that facilitate or impede optimal control.<sup>1,3-5</sup> Routine screening with genograms helps some physicians identify patients at risk for specific medical and psychiatric conditions and

evaluate general health risk related to stress and support within the family system.<sup>1-3,6</sup> Proponents also find that conducting a genogram interview improves rapport and enhances the physician-patient relationship.<sup>1</sup> Finally, physicians who study their own genogram are thought to gain insight into how their own family experiences influence their medical care.<sup>1,3</sup> In short, promoters claim that using genograms in family practice offers many benefits.

Preliminary research indicates that most practicing physicians usually do obtain family information during a patient's first visit, but they spend barely 5 minutes doing it and concentrate almost exclusively on medical history.<sup>7</sup> While genograms make more family information available to physicians than they would obtain routinely,<sup>8,9</sup> one study (the only one to date) found no change in physician behavior attributable to the presence of a genogram.<sup>9</sup> For the most part, however, claims that genograms make a difference in clinical encounters—influencing what physicians think (and

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From the Department of Family Medicine, Baylor College of Medicine, Houston, and the Department of Psychology, College of William and Mary, Williamsburg, VA. Address requests for reprints to John C. Rogers, M.D., M.P.H., Department of Family Medicine, Baylor College of Medicine, 5510 Greenbriar, Houston, TX 77005.

do) and how patients view the encounter—have not been fairly tested.

The present study addressed the following three questions about using genograms: (1) Does doing a genogram, or having one available, influence what a physician thinks and does? Specifically, do genograms make physicians more sensitive to psychosocial issues and affect the process of clinical care? (2) Does the presence of a genogram affect the physician-patient relationship or the patient's sense of rapport, satisfaction, or immediate relief? (3) Does how and by whom the genogram is constructed—patient or physician—make a difference about its impact on physicians or the physician-patient relationship?

We studied these questions using a clinical trial in which patients visiting an academic family practice center were randomized to 3 groups: (1) physician-administered genogram (PAGE); (2) self-administered genogram (SAGE), which the patient completed before seeing the physician; or (3) no genogram. The PAGE and SAGE conditions provided a basis for comparing the impact of physicians doing a genogram versus merely having one available. A fourth (baseline) group without genograms was assessed prior to the randomized trial, because other psychosocial trials,<sup>10,11</sup> including an earlier genogram study,<sup>9</sup> have shown contamination of control groups in within-physician designs where the same physicians administer or participate in different experimental conditions. (Contamination occurs when physicians or patients in control conditions behave differently than usual, perhaps as a result of attention or study activities, such as completing questionnaires.) The patients of 5 attending physicians were randomly assigned to each of the four treatment conditions. We chose to study attending physicians, well established in their care of patients and acquainted with how family factors affect health, to avoid the complicating factor of training effects that could occur with residents.

## Methods

### *Experimental Design*

In a 4 × 5 (condition by physician) factorial design, samples of each physician's patients were first monitored during a baseline period (condition 1). Then, after the physicians participated in a training session about genograms, their study patients were randomly assigned to the SAGE or

PAGE conditions or to a no-genogram control group. In the SAGE condition, patients completed the self-administered genogram in the waiting room before seeing the physician. Ten patients were assigned to each of the four conditions for each physician. The dependent (outcome) measures were based on postencounter questionnaires completed by both patients and physicians.

### *SAGE and PAGE Protocols*

The self-administered genogram is a six-page booklet consisting of three-step directions for adding family information to a two-page skeleton genogram.<sup>9,12,13</sup> The first step elicits basic demographic and health information about the patient's grandparents, parents, and spouse. The second step obtains information about these family members' other marriages or long-term intimate relationships. The third step adds other family members to the tree: aunts and uncles, brothers and sisters, and children. Medical data include any problems with health or daily living, with attention to 15 specific problems (e.g., high blood pressure, diabetes, depression) listed in step one of the instructions. Relationship data (e.g., overly close, conflictual, or estranged dyads), while included in an earlier version of the SAGE,<sup>9</sup> were not included in this study.

The physician-administered genogram required the same information, recorded on a skeleton genogram identical to that used for the SAGE. Physicians were asked to spend at least 5 minutes gathering family information, but they were not expected to complete a full three-generation genogram, which takes 15 to 20 minutes with a semistructured interview.<sup>8</sup>

All physicians attended a 1 1/2-hour orientation and training session, which reviewed the study design, the postencounter physician questionnaire, and construction of the PAGE. Material was distributed illustrating a step-by-step approach to reading and interpreting genograms, with some clinical examples.<sup>13,14</sup>

### *The Physician Sample*

Five attending physicians, each with a full-time academic appointment and at least 5 years of practice experience, volunteered to participate in the study. The 3 men and 2 women had each practiced at this site for at least 2 years. Four were

married and had children. All were familiar with genograms and with the clinic medical record. (The medical record provided a small 1 3/4- × 4-inch space for recording a genogram, which only one of the physicians had used regularly.)

### **Patient Sample**

A research assistant recruited English-speaking patients 18 years of age and older, who had made at least one prior clinic visit, to participate in the study. Patients were excluded if they had a particularly severe or urgent problem, were unable to read, or were too debilitated or distressed to respond to the genogram questions. New patients were not recruited because they would be overburdened with forms and because the intake history form duplicated information on the genogram. The standard intake form requested information about the ages, general health, and specific health problems of the patient's parents, siblings, spouse, and children.

The patient sample included 141 women and 48 men ranging in age from 18 to 83 years (median = 33 years). Fifty-three percent of the patients were married, 36 percent were single, and 11 percent were separated or divorced. Fifteen percent of the sample had not graduated from high school. The ethnic breakdown was 65 percent white, 20 percent black, 9 percent Hispanic, and 6 percent other. Reasons for visiting the clinic included acute medical problems (38 percent), chronic medical problems (17 percent), and health maintenance (38 percent). More than one-half of the patients (59 percent) had seen the study physician previously.

### **Measures of Impact**

Three types of impact measures were derived from the patient and physician postencounter questionnaires: The *physician's problem assessment* was measured by items concerning (1) the relevance of psychosocial issues in diagnosis or assessment, (2) the importance of psychosocial issues in the management or treatment of the patient's problem(s), and (3) how well the physician believed he or she understood the patient's problem(s). Physicians rated each item on 7-point Likert scales defined by 1 = not at all, 4 = moderately, and 7 = extremely. Measures of *clinical procedures* included physicians' and patients' esti-

mates of the length of the encounter in minutes, and their (parallel) reports of whether the physician ordered tests, performed a "treatment procedure," provided counseling, prescribed drugs, referred the patient to another physician, recommended a follow-up visit, and talked to a member of the patient's family. The *patient's view of the encounter* was assessed by 11 questions about his or her view of the physician<sup>15</sup>; in addition, there were two questions about how distressing patients' problems were before and after seeing the physician, 18 questions about their comfort in (9 items) and likelihood of (9 items) discussing various personal and family problems with their physician,<sup>16,17</sup> and a single item measuring their overall satisfaction with the visit. All questions were answered on 7-point scales. The ratings of the physician and discussion of psychosocial problems were factor analyzed to identify items sufficiently intercorrelated to be combined into composite scales (see below). In addition, a difference score (pre-session distress minus post-session distress) was calculated as a measure of "relief."

### **Genogram Completion and Use**

In the SAGE and PAGE conditions, physicians used the postencounter questionnaire to rate on a scale from 1 to 7 the extent to which the family genogram contributed to their decision making in the encounter. Later, the research assistant calculated a completeness score for each genogram. Completeness was defined as the average proportion of requested genogram information recorded on the skeleton tree for each of three generations.

## **Results**

### **Preliminary Analyses**

Principal-components factor analyses (using the SPSS-X principal components algorithm with varimax rotation)<sup>18</sup> performed on the 11 patient-view-of-physician items and on the 18 comfort and likelihood items permitted reducing these 29 items to four composite scales: *doctor understands* (4 items), *doctor explains* (4 items), *doctor is arrogant* (3 items), and *willing to confide in doctor* (18 items). The values for Cronbach's alpha (indicating a scale's internal consistency) for the four composite scales were 0.70, 0.58, 0.54, and 0.94, respectively.

**Table 1. Comparison of Baseline, Control, SAGE, and PAGE Conditions: Mean Values for Physician's Problem Assessment and Patient's View of Encounter.**

	Baseline Mean (n)	Control Mean (n)	SAGE Mean (n)	PAGE Mean (n)	Main Effect
<b>Physician's problem assessment (all 1-7 scales)</b>					
Relevance of psychosocial issues to diagnosis or assessment*	4.3 (47)	4.7 (45)	4.0 (45)	4.4 (47)	NS
Relevance to management or treatment*	4.3 (48)	4.9 (45)	4.5 (43)	4.7 (47)	NS
Understanding of patient's problems*	4.7 (48)	4.4 (45)	4.4 (45)	4.7 (47)	NS
<b>Patient's view of encounter</b>					
Physician understands (1-7 composite scale)	6.0 (50)	6.3 (46)	6.2 (45)	6.2 (47)	NS
Physician explains (1-7 composite scale)	6.4 (50)	6.4 (46)	6.4 (45)	6.4 (47)	NS
Physician is arrogant (1-7 composite scale)	1.4 (48)	1.4 (46)	1.6 (45)	1.6 (47)	NS
Willingness to confide in physician (1-7 composite scale)	5.6 (50)	5.5 (45)	5.6 (42)	5.7 (46)	NS
Satisfaction with visit (1-7 scale)	6.6 (49)	6.5 (46)	6.5 (43)	6.6 (47)	NS
Relief of distress (difference score)	0.7 (50)	1.0 (44)	0.8 (44)	0.8 (45)	NS

SAGE = Self-administered genogram, PAGE = Physician-administered genogram, NS = not significant.

\* Physician main effect significant at ( $P < 0.05$ ).

Although we had planned to combine patient and physician perceptions of (the same) clinical procedures, phi coefficients expressing physician-patient agreement on what happened during the encounter were surprisingly low, with 5 of 8 less than 0.50. Interjudge reliability was especially poor for *provided counseling* ( $\phi = 0.14$ ) and *performed treatment procedure* ( $\phi = 0.29$ ); better interjudge reliability was found for *prescribed drugs* ( $\phi = 0.75$ ) and *referred to another physician* ( $\phi = 0.59$ ). Because of poor agreement on these seemingly objective clinical events, the physician's and patient's perceptions were examined separately in the main analyses.

#### **Comparison of Experimental Conditions: Impact Analysis**

Two-way ( $4 \times 5$ ) analyses of variance were performed on all of the dependent variables to identify main effects and interactions involving the condition (baseline, control, SAGE, PAGE) and physician factors. Main effects of condition and physician were found for some dependent variables, but in no case was there a significant condition-physician interaction. Physician effects, though detected, were not relevant to the main hypotheses. Subsequent analyses therefore fo-

cused directly on comparisons of the four treatment conditions, using post hoc t-tests and chi-square tests as appropriate. Tables 1 and 2 show means and proportions, by condition, for all of the impact measures, along with significance levels for the overall comparison (based on F-ratios and chi-square tests) and the results of pairwise post hoc comparisons of the four conditions (based on chi-square and t-tests).

In general, the results failed to support any of the hypotheses. There were no differences among conditions for measures of the physician's problem assessment or the patient's view of the encounter. In other words, the genograms had no apparent impact on how much importance physicians attached to psychosocial factors or how well they believed they understood the case. Nor did the genogram manipulation influence patients' views of the physician, their satisfaction with the visit, or their reported relief of subjective distress. Main effects of the physician factor were significant for all three physician problem assessment variables, but not for any of the six variables representing the patient's view of the encounter. Thus, who the physician was made a difference in how physicians described patients, but not in how patients described physicians.

The only significant condition effects concerned physicians' and patients' perceptions of what happened during the clinical encounter, including how long it took. (These results are summarized in Table 2.) Not surprisingly, the proportion of patients reporting that the physician asked about their families was higher for the PAGE group than for the baseline and control groups. An unexpected finding was that physicians reported performing fewer "treatment procedures" during genogram encounters than during baseline encounters. Thus, when a genogram was involved, physicians apparently believed they had provided less "treatment." As expected, both physicians and patients judged PAGE encounters to be longer than baseline encounters. The Student t-test for related samples, comparing physicians and patients regardless of treatment group, showed that visit durations reported by patients

were nearly 20 percent longer than those reported by physicians. Patients also reported nearly four times more often than physicians that a treatment procedure had been performed. Apparently physicians and patients have different notions of what constitutes a "treatment procedure," with patients having a much broader definition than physicians.

### ***Genogram Completeness and Relevance to Decision Making***

The physician-administered genograms were less complete than the patients' self-administered genograms, but physicians believed the PAGE contributed more to their clinical decision making in the encounter. Mean completion rates (based on the three-generation criterion) were 70 percent and 33 percent for the SAGE and PAGE groups, respectively ( $t = 8.27, df = 91, P < 0.001$ ).

**Table 2. Comparison of Baseline, Control, SAGE, and PAGE Conditions: Means and Percentages for Clinical Procedures.**

Clinical Procedures	Baseline B (n)	Control C (n)	SAGE S (n)	PAGE P (n)	Main Effect	Post Hoc Differences
Length of encounter (mean minutes)						
Physician*	17.1 (42)	16.9 (29)	19.6 (33)	22.4 (27)	0.096	CB < P
Patient*	18.4 (48)	24.0 (44)	19.9 (41)	23.9 (47)	0.032	B < PC
Ordered tests (%)						
Physician*	42 (48)	33 (45)	51 (45)	36 (47)	NS	—
Patient*	41 (44)	44 (45)	58 (43)	57 (47)	NS	—
Performed a treatment procedure (%)						
Physician	21 (47)	13 (45)	4 (45)	6 (47)	0.046	SP < B
Patient*	44 (45)	47 (45)	41 (44)	42 (45)	NS	—
Provided counseling (%)						
Physician*	65 (46)	49 (45)	40 (45)	51 (47)	NS	S < B
Patient	49 (43)	56 (45)	49 (43)	50 (46)	NS	—
Prescribed drugs (%)						
Physician	52 (48)	58 (45)	44 (45)	60 (47)	NS	—
Patient	46 (46)	64 (45)	34 (44)	49 (47)	0.039	S < C
Referred to another physician (%)						
Physician	13 (46)	18 (45)	18 (44)	11 (47)	NS	—
Patient	19 (42)	20 (45)	23 (44)	15 (47)	NS	—
Recommended follow-up visit (%)						
Physician*	67 (46)	78 (45)	77 (44)	68 (47)	NS	—
Patient	63 (46)	65 (46)	60 (42)	68 (47)	NS	—
Talked to a family member (%)						
Physician	13 (48)	7 (45)	2 (45)	4 (45)	NS	—
Patient*	9 (43)	13 (45)	5 (44)	9 (47)	NS	—
Asked about family (%)						
Patient*	70 (46)	63 (46)	86 (43)	92 (47)	0.003	C < SP, B < P

Probability levels are from analysis of variance or chi-square tests. Post hoc comparisons indicate significant ( $P < 0.05$ ) differences between means or percentages, based on t-tests or chi-squares.

\*Physician main effect significant at ( $P < 0.05$ ). NS = not significant. SAGE = self-administered genogram, PAGE = physician-administered genogram.

The physicians' mean relevance-to-decision-making ratings for the SAGE and PAGE conditions were 2.1 and 2.9 ( $t = 2.18$ ,  $df = 82$ ,  $P = 0.03$ ) on a scale from 1 to 7. The physicians considered more than one-half of the SAGEs "not at all relevant" to their clinical decisions, compared with 28 percent of the PAGEs.

It is possible that the incompleteness or perceived irrelevance of particular genograms can help to explain why the main manipulation had no detectable impact. To check this possibility, we correlated the completeness and relevance measures with the main dependent variables—physician's problem assessment, clinical procedures, and patient's view of the encounter. Except for a single significant (but possibly spurious) negative correlation within the PAGE group, between completeness and the physician's report of prescribing drugs ( $r = -0.39$ ,  $P = 0.008$ ), the results showed no evidence that either the completeness or perceived relevance of a genogram was related to its impact on physicians or patients. Nor were completeness and perceived relevance related to whether the patient visited the center for an acute problem, a chronic problem, or for health maintenance.

### Discussion

The results provide little support for claims that routine use of genograms affects how physicians think about and deal with clinical problems or how patients view the encounter with their physicians. Compared with control groups, neither patient- nor physician-administered genograms increased the physician's (self-defined) understanding of the patient or the importance the physician attached to psychosocial issues in the case. Even the most complete genograms, and those physicians judged most relevant to their decision making, appeared to have little effect on these outcomes. A positive finding was that physicians considered genograms more relevant when they did them themselves. On the other hand, physician-administered genograms also increased the length of the encounter and were substantially less complete (conveying less information) than genograms completed by patients.

Negative findings such as these invite close examination of threats to internal and external

validity. Whether the patient sample was large enough to detect meaningful differences between conditions apparently was not an issue, because the design had enough power to detect significant differences among physicians on many of the outcome measures, with fewer patients per physician than per treatment group. Another question concerns the availability of family information on the intake form in the chart. Conceivably, the physician having this information made the genograms redundant and masked possible benefits; however, even if the physicians had studied closely this part of the chart (which is unlikely), one of the presumed advantages of the genogram is that its manner of displaying information makes that information more compelling. A third potential threat to internal validity relates to measurement artifacts: specifically, ceiling and floor effects resulting from patients' highly positive responses to a number of questionnaire items may well have precluded the genogram conditions showing improvement over baseline- and control-group scores. Still, even conceding this possibility for the patient measures, such an artifact cannot explain the absence of meaningful results for the measures of physicians' problem assessment and the perceptions of clinical procedures.

Questions about important threats to external validity relate to the representativeness of the genograms and the physicians. The genograms in our study may differ from those typically used by other physicians, not only in their completeness, but in failing to portray estranged, conflictual, or overinvolved relationships—information many family therapists regard as crucial to clinical formulations.<sup>20</sup> The possibility that such relationship data would have made a difference in the present study is unknown and cannot be ruled out. The 5 academic family physicians we studied may also have been atypical in that they were motivated enough to volunteer for a research project and to complete a training session on using genograms. This small sample may not fairly represent the population of practicing family physicians, and it surely does not represent family practice residents or genogram experts—either of whom may have shown more positive results. As less experienced clinicians, residents may appreciate a more structured (anxiety-free) approach to learning about

the patient's family situation. Indeed, because residents have been observed to ignore family information spontaneously mentioned in patient encounters,<sup>21</sup> the genogram may have special benefits for them. (The attending physicians in the present study asked about family members in 60 to 70 percent of the baseline and control visits.) At the other extreme, experts with more refined genogram skills undoubtedly find advantages to using this tool that nonexperts do not. Thus, it is possible that our physicians comprised a "middle group" who were less likely than experts or novices to benefit from using genograms.

How can these negative results be reconciled with the obviously genuine enthusiasm many clinicians show for the family genogram? One answer may lie in a physician's natural tendency to recall significant (salient) cases and generalize from them to routine clinical encounters.<sup>22</sup> For example, a clinician may find that a genogram sheds new light on a difficult case or that, in routine application, it turns up clinically significant material that otherwise would have been overlooked. Another clinician may find that doing a nonthreatening genogram dissolves resistance to exploring a patient's personal life and transforms the physician-patient relationship. Recalling such special cases may well solidify the genogram's importance in the mind of the clinician. Unfortunately, given that genograms *sometimes* provide valuable clinical information or deepen the physician-patient relationship does not mean they always—or even frequently—do. In the present study, for example, physicians rated only 7 of 84 genograms above the midpoint of a scale measuring the genogram's relevance to clinical decision making. Nevertheless, some clinicians would argue that if even 1 in 12 genograms is valuable, that alone justifies all 12. Because genograms are neither expensive nor dangerous, who could disagree? Even a small yield may justify the cost.

### Summary

The negative results of this clinical trial call for caution, if not skepticism, about claims that routine use of genograms improves the quality of primary care. The results leave open the possibility that genograms do make a difference when used routinely by residents or experts, or in dif-

ficult cases when family assessment is indicated.<sup>23</sup> While enthusiasm about genogram applications in family medicine is understandable, and perhaps even justifiable, the clinical utility of this tool remains to be demonstrated scientifically.

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## NOTICE

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The next examination for the American Board of Family Practice Certificate of Added Qualifications in Geriatric Medicine will be administered on April 10, 1992. Application materials for this exam are now available with a return deadline of November 1, 1991. ABFP Diplomates interested in participating in the exam should request application materials by writing to:

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