

A comparison of parent and adolescent responses from independent health histories

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Abstract

This study compared agreement of written responses between parent and adolescent concerning medical and psychosocial information from independent health histories during an initial medical visit. Records with two health histories completed separately by 268 parent/adolescent pairs were studied. The following medical questions were coded and compared: chief complaint, infectious diseases, review of systems, hospitalizations, accidents, allergies, and medications. Psychosocial questions included recreational drug use, sexual behavior, body image, home life, and mental health. Using three-factor repeated measures ANOVA, significant differences ($P \leq 0.05$) were obtained for gender and age when comparing the mean scores for medical and psychosocial questions. These differences were found primarily in the psychosocial category and chief complaint question. Findings suggest that many adolescents are reliable informants about their medical histories, but private interviewing of the teenager may be necessary to determine high-risk behaviors.

Introduction

Obtaining a thorough medical history before treating a child is the standard of care in pediatric dentistry. Just who the appropriate informant is when the patient is a consenting adolescent remains controversial. Health care providers have noted difficulties in obtaining accurate medical histories from adolescents who are inexperienced, shy, inarticulate, or noncompliant (Levine 1970; Silber 1976). For this reason, the parent or guardian traditionally has been used to provide information.

The degree of accuracy of an adolescent health history is a major concern when it is completed solely by a parent or guardian. A stepparent or extended family member who is unfamiliar with the health status of the adolescent, yet also is the responsible guardian is also a

problem. The adolescent seeking medical or psychological treatment without the knowledge or consent of the parent presents another complication. US statutes address the right of younger patients to medical treatment without parental consent, and many states recognize the right of teenagers to obtain family planning services, pregnancy testing, treatment for sexually transmitted diseases, counseling for substance abuse, and treatment for emotional problems without informing the parent (Hofmann 1980).

Currently, no guidelines suggest who is the better informant when obtaining a medical history about a youth. Pediatric dentists who care for adolescents need to be aware that parents of teenagers may not be reliable informants about specific health problems — the very health problems that could significantly influence treatment and management of the adolescent. The accuracy and completeness of disclosure in a health history can be questioned when the parent primarily is responsible for providing information.

The purpose of this retrospective study was to compare the agreement of written responses between parent and adolescent concerning medical and psychosocial information from independent health histories during an initial medical visit. The gender and age of the patient and type of health history questions were analyzed for difference in patterns of responses.

Methods and Materials

Two examiners reviewed 400 medical charts from the Adolescent Medicine Center at The Children's Hospital in Denver. This health care facility primarily serves adolescents between the ages of 10 and 21 years from Denver and the surrounding suburbs. By race, this group is 68% white, 20% Hispanic, 11% black, and 1%

other. Coverage for medical treatment includes 75% private insurance, 12% Medicaid, 11% fee-for-service, and 1% unknown.

Criteria for selection in the study included the completion of separate adolescent health histories by both the parent and teenager. Only those patients between the ages of 11 and 18 years were evaluated. A total of 267 parent/adolescent pairs were suitable for comparison. From the original 400 charts reviewed, 97 could not be studied because they lacked questionnaires by parent or guardian. The remaining 36 records were excluded because the patient did not fall into the specified age range, or because of incomplete health histories by either parent or adolescent.

The information on the health history surveys was broadly divided into two categories: medical questions, and psychosocial questions. Medical questions included chief complaint, history of accidents, hospitalizations, allergies, medications, infectious diseases, and review of systems. Psychosocial questions included recreational drug use, sexual activity, problems or concerns about home life, body image, and mental health. In order to determine the type of patient who sought care, a principal diagnosis was obtained from the medical records. Individual responses were categorized and entered into a data file as a numerical code.

Per cent agreement was calculated for each health history, using the parent as reference. The Chi-square statistic was computed to determine the relationship between demographic and historical variables. Three-factor repeated measures analysis of variance (ANOVA) was used to ascertain differences in medical and psychosocial per cent agreement between ages and sexes of adolescents. All analyses were performed using the SPSS/PC+ Package (Norusis 1986).

Results

The majority of adolescents (92.5%) were between the ages of 12 and 17 years old. The mean age for females was 14.2 years, and for males, 14.4 years. Females accounted for 61% of the patients in the study, males accounted for 39%.

This sample represented a broad range of health problems, and although the most common diagnosis was healthy adolescent, the remaining diagnoses were consistent with physical and psychological problems of this particular age group. The majority of these diagnoses included obstetrical/gynecological problems, acne, psychosocial problems, headaches, eating disorders, asthma and allergies, acute infectious diseases, gastrointestinal complaints, and musculoskeletal injuries, in descending order.

Table 1 lists the per cent agreement between adolescent and parent responses for chief complaint and

TABLE 1. Chief complaint and medical history: per cent agreement between adolescent and parent responses

Question	Per cent Agreement
Chief Complaint	57.9
Accidents	86.5
Description	87.4
Hospitalizations	90.3
Description	84.3*
Allergies	85.0
Description	80.1
Medications	85.0
Type	83.1
Reason	83.5

*Chi-square — significant relationship ($P \leq .05$) with age. Less agreement as age increases.

specific medical questions, including history of accidents, hospitalizations, allergies, and medications. A moderately high per cent agreement (80–98%) was noted for the medical questions. In contrast, a per cent agreement of only 58% was observed for the more subjective and descriptive question, chief complaint. This entire group of questions depended on the comparison of descriptive information in addition to either a positive or negative response to the questions. In general, neither gender nor age was related to the per cent agreement for this group of questions.

TABLE 2. Childhood infectious diseases: per cent agreement between adolescent and parent responses

Question	Per cent Agreement
German Measles	94.8
Mumps	94.4*
Measles	87.6
Chicken Pox	87.3
Hepatitis	99.6
Pneumonia	91.0
Mononucleosis	96.6**
Tuberculosis	99.6

*Chi-square — significant relationship ($P \leq .05$) with age. Less agreement as age increases.

**Chi-square — significant relationship ($P \leq .05$) with gender. Less agreement for females.

The per cent agreement between adolescent and parent responses for history of infectious diseases was very high, ranging from 87–99% (Table 2). These questions had consisted of only positive or negative

responses for each of the infectious diseases. Overall, the gender and age of the adolescent did not show a significant relationship with the per cent agreement of responses. Table 3 illustrates the per cent agreement between adolescent and parent responses for the review of systems. The per cent agreement ranged from 91% for kidney disease to 100% for asthma and diabetes. The majority of these questions were independent of the gender and age of the patient.

TABLE 3. Review of systems: per cent agreement between adolescent and parent responses

Question	Per cent Agreement
Anemia	95.5
Arthritis	99.6
Asthma	100
Diabetes	100
Digestive Disease	92.1*
Endocrine Disease	99.3
Epilepsy	98.5
Heart Disease	98.9
Kidney Disease	91.0**
Migraine	90.3†

*Chi-square — significant relationship ($P \leq .05$) with age. Less agreement as age increases.

**Chi-square — significant relationship ($P \leq .05$) with gender.

Less agreement for females.

†Chi-square — significant relationship ($P \leq .05$) with gender and age. Less agreement as age increases and for females.

When family and psychosocial questions were evaluated for per cent agreement between adolescent and parent responses, the pattern differed from the medical questions (Table 4). The per cent agreement varied from 60.3% for depression to as high as 87% for cigarette use. Per cent agreement about alcohol and cigarette usage dropped as age increased, with the smallest per cent agreement occurring for 15- and 16-year-olds. Females tended to agree with their parents about depression more often than males.

Results from the three-factor repeated measures ANOVA on per cent agreement are displayed in Table 5. Main effects for gender, age, and question type (medical versus psychosocial) were all statistically significant. Presence of significant interactions involving question type meant that differences in per cent agreement for medical and psychosocial questions were not consistent across genders or the eight age groups. In general, the agreement on medical questions was much closer than the agreement on psychosocial questions. Male adolescents agreed with their parents on medical

TABLE 4. Family and social/psychosocial history: per cent agreement between adolescent and parent responses

Question	Per cent Agreement
Home Problem	66.3
Depression	60.3**
Weight Problem	69.3
Sex Activity	75.7
Birth Control	67.3
Alcohol Use	71.5*
Cigarette Use	87.3*
Drug Use	84.6

*Chi-square — significant relationship ($P \leq .05$) with age. Less agreement as age increases.

**Chi-square — significant relationship ($P \leq .05$) with gender. Less agreement for females.

TABLE 5. ANOVA testing differences in per cent agreement by question type (repeated), gender and age

Source	df	MS	F
Sex (S)	1	1571.6	8.7*
Age (A)	7	622.5	3.4*
Quest type (qt)	1	40990.5	250.4**
S x A	7	37.8	.21
S x qt	1	3229.2	19.7**
A x qt	7	976.8	2.9*
S x A x qt	251	163.7	
Subject: SA (within)	251	181.2	

* $P \leq .01$

** $P \leq .001$

questions more than female adolescents, while the reverse was true for psychosocial questions. Younger adolescents agreed more closely with their parents than did older adolescents. This information is summarized in Table 6 (see next page).

Discussion

In general, it appears that the adolescent and parent tend to agree overall about the health status of the adolescent. This finding is consistent with data from the National Survey of Youths (National Center for Health Statistics 1977), which compared parallel responses about general health and health-related behaviors from independent parent and youth surveys. In the present study, a high per cent agreement occurred for recall of past illnesses, history of allergies, accidents, surgeries, and hospitalizations. However, any self-administered health history is subject to biases in memory and motivation (Gumpel and Mason 1974; Pecoraro et al. 1979; Krall et al. 1988).

TABLE 6. Mean per cent agreement by question: type, gender and age

Age	Medical Questions (%)			Psychosocial Questions (%)		
	Males	Females	Total	Males	Females	Total
11	92.0	91.5	91.7	72.2	86.1	81.5
12	91.8	91.1	91.5	67.2	75.4	70.6
13	90.1	88.8	89.2	67.3	78.8	74.8
14	93.7	89.1	90.7	64.9	75.5	71.6
15	90.0	90.6	90.4	58.3	70.8	66.0
16	91.1	89.1	89.9	53.6	67.1	61.8
17	89.6	88.0	88.5	57.8	67.7	64.6
18	91.0	86.4	88.5	51.9	60.0	56.9
Total	91.3%	89.5%	90.2%	62.2%	73.4%	68.8%

No attempt was made to determine which responder was correct when there was a discrepancy; however, it was the adolescent who, most frequently provided more positive responses in the health history survey. The main exception was reporting medical incidences occurring under the age of 18 months. This discrepancy could be explained by the fact that adolescents have better awareness of their health than their parents. Similar findings have been noted in psychiatric interviews of child and parent, with the parent reporting less illness (Weissman et al. 1987).

Some errors may be due to overreporting. Adults who were asked to recall childhood disease made more errors of commission than errors of omission, especially for recall of communicable diseases, hospitalizations, and accidents. Overreporting on a retrospective questionnaire may be due to the assumption that one's medical history is typical and, therefore, should include well-known childhood diseases (Krall et al. 1980).

Discrepancies between parents and adolescents with the more subjective question, chief complaint, were interesting. Per cent agreement for this question was the lowest of all responses compared (57.9%). This difference may be because the question required a descriptive answer instead of a simple positive or negative response. Yet, the descriptive responses included with the questions about accidents, hospitalizations, allergies, and medications had much better agreement (80.1–87.4%). The best explanation may be that adolescents may have a "hidden agenda" unknown to the parent. Concerns about body image, birth control, alienation, and school and family conflicts were more likely to be reported by the adolescent in the chief complaint question, which supports the "hidden agenda" concept.

In general, medical health history questions showed an overall higher per cent agreement than psychosocial questions. The reliability and validity of adolescent self-reports about high-risk behaviors, such as drug use, have been studied by a number of researchers (Single et

al. 1975; Zanes and Matsoukas 1979; Smart and Jarvis 1981). The main response bias noted in these studies has been underreporting, especially when the studies were carried out in the home environment. Suspicion and fear of exposure or embarrassment may affect the adolescent when family members participate with them at the same time.

In this particular study, questionnaires were completed independently, at the initial visit in the clinic reception area. The per cent agreement for these more sensitive issues ranged from 60% for depression to as high as 84% for drug use and 87% for cigarette use. The adolescent provided the most positive responses, but underreporting was detected for all categories except depression, weight concerns, and home problems when compared to state and national statistics. (Colorado Department of Health 1986). This study suggests that the more threatening the question, the less likely the teenager is to admit to the behavior, particularly when both parent and adolescent are answering in the same room.

In general, the adolescent male agreed more frequently with the parent than the adolescent female concerning medical questions. This may be explained by the fact that the females had more health problems. However, it was the adolescent female who was most consistent with the responses of the parent for psychosocial questions, which agreed with findings from the National Survey of Youths that compared health perceptions and attitudes of adolescents and those of their parents (National Center for Health Statistics 1977). The results of this comprehensive study demonstrated that female adolescents agreed with parents approximately eight percentage points higher than males.

In this study, the younger age group agreed more frequently with the parent for all questions when compared to the older age groups. This is in contrast to the findings from the National Survey of Youths, which

found that the older adolescent was more likely to agree with parental responses (National Center for Health Statistics 1977). The differences between these studies could be explained by the fact that the questions in the later study were more value-oriented health attitudes as opposed to specific personal questions.

Young people between 11 and 20 years old have the lowest rate of visits to physicians of all the age groups (Cypress 1984). A similar decline in dental visits for routine and preventive care has been documented, even though significant dental problems, such as caries and periodontal disease exist (Casamassimo et al. 1979). Even when access to health care services is not a problem, some adolescents refuse services that are not confidential. A controversial study, involving adolescents' willingness to utilize health care resources, observed that the majority of youths would be reluctant to seek treatment from a private physician for care related to sexuality, substance abuse, or emotional problems. In addition, they would not be willing to seek care for these problems with their parents' knowledge (Marks et al. 1983). Confidentiality appears to be an important adolescent issue when developing policies to improve medical and dental health care for youths in the United States.

This study suggests that pediatric dentists using a common health history form for all age groups may be missing important information about the teenager. The health history should be modified to include questions concerning smoking, alcohol and recreational drug usage, pregnancy, oral contraceptives, and sexually transmitted diseases. Questions concerning emotional problems, family problems, social concerns and body image may be more controversial to include in the dental health history, but the pediatric dentist may be in a unique position to make appropriate referrals when these problems are disclosed (Casamassimo 1988).

Conclusions

The following conclusions can be drawn from this study:

1. There was good agreement between adolescent and parental responses for history of infectious diseases, review of symptoms and specific medical questions
2. The sex or age of the adolescent did not affect agreement with a parent for chief complaint, specific medical questions, and a majority of systems reviewed
3. Agreement on medical questions was much closer than on psychosocial questions
4. Males were more often in agreement with parents on medical questions while females agreed more often on psychosocial questions

5. Younger adolescents agreed more with parents overall than did older adolescents.

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