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Marriage and Family Therapy Research in Health Care: Investigating the Accuracy of Self and Family Reports of Medical Use

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Health care research applied to couples and families has been hampered by the high cost of obtaining and hand reviewing medical charts. Fortunately, self-report of medical use has been shown to be a useful measure of medical utilization with individuals. However, no such research has been reported to see if the same is true for couples and families. Self-reported medical use for 130 clients seen at a marriage and family therapy clinic and their report of family members' medical use, was compared with medical records. Results showed that self-report, spouse reports, and parent reports of medical visits were significantly correlated with medical records. These results suggest that researchers and clinicians may reliably use self and family member's reports instead of reviews of medical charts.

Providing a financially effective treatment has become particularly important as the costs of overall health care and mental health care have skyrocketed (Goodman, Brown, & Deitz, 1996). One important argument supporting the value of mental health services in primary care settings is the "medical offset effect," that is the inclusion of mental health services in primary care actually decreases medical and surgical costs and reduces unnecessary medical visits (Cummings, 1997). Researchers have evaluated a medical cost offset

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associated with receiving mental health services (Chiles, Lambert, & Hatch, 1999; Cummings, 1997; Moran, 1999). One meta-analysis found an average medical cost savings of 20–30% after participating in psychotherapy when taking into consideration the costs of the psychotherapy itself (Chiles et al., 1999). Others have found a medical offset effect in terms of a decrease in the utilization of medical services (Law & Crane, 2000). This offset effect is even more pronounced for people who are "high utilizers" (those whose amount of medical use was one standard deviation above the comparison group) of medical care (Law, Crane, & Berge, 2003).

As health care use reduction has received more attention, medical offset has become a promising area for research, particularly in MFT (Law & Crane, 2000). At present, however, there are few investigations into the offset effect for MFT (Crane, Wood, Law, & Schaalje, 2004; Law & Crane, 2000; Law et al., 2003). One reason for the lack of investigations into this area is that many marriage and family therapy researchers are housed in university departments, agencies, and clinics without access to medical records. Furthermore, gaining access to systems that have medical records has been reported as risky and time-consuming (Crane & Law, 2002; Crane, Hillin, & Jakubowski, 2005).

Therefore, the goal of this study is to investigate the accuracy and usefulness of self-reports of medical utilization and family member reports of the medical utilization of their spouses and children. If self-reports and/or family reports are found to be reasonably accurate, self-reports will be established as a reliable and valid measure of health care use. No longer would those with access to medical records be the only researchers able to legitimately study medical offset effects.

Medical Offset

MEDICAL OFFSET AND MFT

There have been few studies examining medical offset effects with marriage and family therapy. However, studies have shown that children in families who attend family therapy significantly reduced their medical utilization rates afterwards (Finney, Riley, & Cataldo, 1991). Additionally, family therapy was reported to reduce heath care visits for the identified patient by 9.5% (Law & Crane, 2000). Other studies showed that adding behavioral marital therapy to individual alcoholism counseling produced a significant cost benefit (O'Farrell et al., 1996). Further, Prigerson, Maciejewski, and Rosenheck (1999) observed a decrease in medical visits as marital quality improved. Finally, participants in marriage and family therapy reduced their medical utilization by 21.5% (Law & Crane, 2000). When investigating high utilizers of health care services, those using medical services about twice as often as average, an even larger medical offset effect of 50% was found after marital therapy was completed (Law et al., 2003).

ABIDING OFFSET EFFECT AND THE FAMILY

It is possible that as a member of a family receives psychological treatment and realizes a reduction in symptoms, there is an abiding offset effect for family members not involved in therapy. Results of studies investigating this possibility are promising. For example, Law & Crane (2000) reported a decrease in medical use for family members of an identified patient who attended therapy along with the "identified patient" with their offset reduction rates reaching as high as 57% when high utilizers were studied (Law et al., 2003).

The existence of an offset effect for clients who are not an identified patient could be very important and suggests the possibility of significant cost savings. If the influence of family therapy is felt throughout the family, family therapy may be more cost effective than other types of therapy because at least two family members are being treated simultaneously.

Measurement of Medical Utilization: What is the "Gold Standard?"

MEDICAL RECORDS

Some researchers have chosen to obtain medical utilization information through subjects' medical records (e.g., Cummings, 1997; Law & Crane, 2000). Not only does this method of collecting data require a high level of participation by an HMO, insurance company, or health care service provider, but it is expensive, time-consuming and often risky as decision makers who allow data collection have the power to revoke access at any time (Crane & Law, 2002; Crane, Hillin, & Jakubowski, 2005).

Additionally, there is no evidence that medical records provide the most accurate measure of health care use. For example, the quality of records vary across sectors and providers (Roberts, Bergstralh, Schmidt, & Jacobsen, 1996). Medical records may be incomplete, and may not contain "out-of-plan" services (Clark, Ricketts, & McHugo, 1996). Although imperfect, medical records have often been used to measure health care utilization.

SELF-REPORT

Self-report has received mixed support in the literature as an accurate indicator of actual medical use. Additionally, other research has shown no significant differences between patient and provider reports of pharmacy and hospital use (Rozario, Morrow-Howell, & Proctor, 2004). On the other hand, some research suggests that subjects tend to underreport their medical use and that this discrepancy increases with the time of the recall period (Petrou, Murray, Cooper, & Davidson, 2002).

In addition, there have been no known studies of the ability of family members to report the health care use of other family members. If spouses

and parents can accurately report on each other's health care use, information about the larger family system can be obtained from a single individual. Since previous research (Crane & Christenson, 2008; Law & Crane, 2003) suggests that non-identified patients in family therapy also reduce their health care use after family therapy, this assessment procedure could provide important research cost savings since only one family member would need to be assessed to obtain reliable health care utilization data for an entire family.

While there may be no "gold standard" for measuring medical utilization, it is logical to expect either self-reports or medical records to be as accurate as any other measure. Consequently, it may not be possible to determine which is the "true" measure when there are discrepancies between patients' self-report and medical records. However, despite the limitations for both methods, the content of self-report and medical records for a given participant should at least agree in a statistically significant manner. Therefore, the goal of the present study is to assess agreement of self-reports, spouse reports, and parent reports of medical use and medical records.

Research Questions

Further investigation into the association of MFT and medical offset effects is warranted. However, the most appropriate and efficient way to measure medical utilization is not clear. Therefore, it is necessary to assess the validity of self-reports and family member reports of medical utilization. Comparisons between subject reports and medical records are a logical approach to investigate the accuracy of self and family member reports. For the purposes of this study, "medical visits" are defined as the number of visits to medical providers such as primary care or family doctors, internists, surgeons, or medical specialists, physician assistants, or medical nurse practitioners. The medical visits were not classified according to their purpose, whether it is prevention or treatment. Only a count of the number of medical visits in the last six months was considered. The three primary research questions are: (1) What is the relationship between self-report of medical visits and the medical visits according to medical records? Do self-report and medical records differ significantly when reporting medical visits, and if so, how much? (2) What is the relationship between a spouse's report of the subject's medical visits and medical visits according the subject's medical records? Do spousal reports and subject's medical records differ significantly when reporting medical visits, and if so, how much? (3) What is the relationship between parental reports of a child's medical visits and medical visits according to the child's medical records? Do parental reports and child's medical records differ significantly when reporting medical visits, and if so, how much?

METHOD

Subjects

A sample of 130 individuals who requested marriage and family therapy services from the Comprehensive Clinic at Brigham Young University (BYU) was recruited. Participants were 19 to 68 years old ($M = 31$). The sample was 60 percent female, 94 percent Caucasian, 3 percent Hispanic, and 3 percent other ethnicities. The mean income for the sample was $26,951 (*range = $0 – 150,000, SD = $27,023*). The mean education level for the sample was 13.25 years (*range = 1 – 23, SD = 4.8*). Subjects were paid $30.00 per person for participating in the study.

Procedure

During their initial contact with clinic, prospective subjects heard a brief description of the project and consented to participate. Subjects received a packet of questionnaires in the mail that they were asked to fill out prior to their first therapy session. After subjects signed the research and medical release of information forms, the medical records were requested from their primary care provider. Medical records were given a case number and all identifying information was removed.

Description of Measures

PATIENT ASSESSMENT QUESTIONNAIRE (PAQ)

The PAQ is a self-reported comprehensive health history of which medical care utilization is one subscale (Wells et al., 2000). The focus of this study was on item 12, which asks, "During the past six months, how many visits did you make to medical providers such as primary care or family doctors, internists, surgeons or medical specialists, physician assistants, or medical nurse practitioners?"

MODIFIED PATIENT ASSESSMENT QUESTIONNAIRE (MPAQ)

The MPAQ assesses subjects' reports of medical care use of a spouse and of the oldest child in the family in the last six months. The first MPAQ question used asks, "If married, during the last 6 months, how many times has your spouse visited his/her primary care physician?" The second MPAQ question used asks, "If a parent, during the last 6 months, how many times has your oldest child (under 18 years of age) visited his/her primary care physician?"

Analysis

RESEARCH QUESTION 1

What is the relationship between self-report of medical visits and medical visits according to medical records? Pearson's correlation coefficients were used

to determine if the number of self-reported health care visits is significantly related to the quantity of visits found in medical records.

Do self-report and medical records differ significantly when reporting medical visits, and if so, how much? Paired sample t-tests were used to determine if the number of medical visits reported differed significantly between self-report and medical records. The mean difference score between self-reported visits and number of visits according to medical records was reported.

RESEARCH QUESTION 2

What is the relationship between spouse reports of medical visits for their partner and the number of medical visits according to their partner's medical records? To examine this question, spouse reports of their partners' medical visits were compared with the medical records of their spouse. Again, a correlation coefficient was computed.

Do spouse reports and the medical records of their partner differ significantly when reporting medical visits, and if so, how much? Paired sample t-tests were used to determine if the number of medical visits reported differed significantly between spouse reports and medical records. The mean difference score was reported.

RESEARCH QUESTION 3

What is the relationship between parental reports of a child's medical visits and medical visits according to the child's medical records? To examine this question, subjects' reports of medical care utilization for their oldest child were compared with the child's medical record. Only unique parent-child combinations were used. In other words, only one parent's report was compared to that parent's child's medical records. Again, a correlation coefficient was computed.

Do parental reports and children's medical records differ significantly when reporting number of medical visits, and if so, how much? Again, paired sample t-tests were used to determine if the number of medical visits reported differs significantly between parent reports and medical records. The mean difference score was reported.

RESULTS

Relationship between Self-Report and Medical Records

The first research question asks, "what is the relationship between self-report of medical visits and medical visits according to medical records?" The number of medical visits in the past six months according to self-reports was significantly correlated to the number of medical visits according to medical

TABLE 1 Correlations Between Self-Report, Spouse Report, and Parent Report of Medical Visits and Medical Record Reports of Medical Visits

Correlation with Medical Records		n
Self-report	.63*	130
Spouse report	.66*	79
Parent report	.77*	52

* *p* < .01.

records $r(130) = .63$, $p < .01$. Table 1 shows the correlation coefficients for self-reports, spouse reports, and parent reports and corresponding medical records.

The second part of the first research question asks, "do self-report and medical records differ significantly when reporting medical visits, and if so, how much?" To determine whether self-reports and medical records differed significantly when reporting medical visits, a paired samples t-test was conducted. The range of difference scores between self-report and medical record report was –4 to +5. In other words, self-report scores ranged from 4 visits less than the medical record report to 5 visits more than the medical record report. The mean difference in number of medical visits reported between self-report and medical records was –.65 with subjects reporting more medical visits ($M = 1.99$, $SD = 2.06$) than medical records ($M = 1.35$, $SD = 1.66$). This difference was significant, $t (129) = -4.47$, $p < .01$ (Table 2). A post hoc analysis was done to examine the clinical significance of the mean difference between medical reports and self-report of medical visits. The mean difference of –.65 represents the tendency of subjects to over-report the number of medical visits in the last six months by 48 percent.

In order to see if the percentage of over-reporting was maintained as the number of medical visits increased, the top 25 percent of the sample, in terms of medical visits in the last six months, was examined by itself. This sub-sample consisted of thirty-two subjects. Again, a paired samples t-test was used to examine differences between self-report and medical record report of medical visits. The mean difference in number of medical visits reported between self-report and medical records was –.13 with subjects

TABLE 2 Differences Between Self-Reports, Spouse Reports, and Parent Reports and Corresponding Medical Records

	Mean *(SD)*	Medical Record Mean *(SD)*	Difference	*t* score
Self-report	1.99 (2.06)	1.35 (1.66)	–.65	–4.47*
Spouse report	1.43 (2.02)	1.22 (1.70)	–.22	–1.22**
Parent report	1.65 (1.61)	1.65 (1.63)	0.00	.000***

* *p* < .01.
** *p* = .23.
*** *p* = 1.00.

reporting more medical visits ($M = 3.75$) than medical records ($M = 3.63$). This difference was not significant, t (31) $= -.32$, $p = .75$.

Relationship between Spouse Report and Subject's Medical Records

Of the 130 subjects for whom medical records were obtained, there were a total of 84 valid corresponding spouse reports. A boxplot of difference scores was created to discover outliers before running the correlation analysis. After eliminating outliers, 79 subjects were left for the analysis.

The second research question asks, "What is the relationship between spouse reports of medical visits for their partner and the number of medical visits according to their partner's medical records?" The correlation between the two reports was significant, r (79) $= .66$, $p < .01$.

The second part of the second research question asks, "do spouse reports and the medical records of their partner differ significantly when reporting medical visits, and if so, how much?" A paired samples t-test revealed that the difference between the number of medical visits reported according to spouse reports and subjects' medical records was not significant, $t(78) = -1.22$, $p = .23$. The range of difference scores between spouse report and medical record report was –4 to +5 visits. The mean difference between spouse reports and subjects' medical records was –.22 with spouses reporting more medical visits ($M = 1.43$, $SD = 2.02$) than medical records ($M = 1.22$, $SD = 1.70$). This indicates that spouse reports agree with medical records.

A post hoc analysis was done to examine if wives or husbands were more accurate in the reporting of their spouse's medical visits. A one way ANOVA was conducted using gender as the independent variable and the difference scores as the dependent variable. The mean difference score between wives' reports and medical records was .21 visits, and the mean difference score between husbands' reports and medical records was .98. This difference between mean difference scores was not statistically significant, F (1, 82) $= 1.71$, $p = .19$. Therefore, wives' and husbands' reports are equally accurate by comparison to medical records.

Relationship between Parent Report and Child Medical Records

Fifty-six corresponding children's medical records were obtained and four outliers were dropped from the analysis leaving 52 subjects for the analysis. The third research question asks, "What is the relationship between parental reports of a child's medical visits and medical visits according to the child's medical records?" The correlation between the reports was significant, r (52) $= .77$, $p < .01$. The second part of the research question asks, "do parental reports and children's medical records differ significantly when reporting number of medical visits, and if so, how much?" Parent reports of

children's medical visits did not differ significantly from children's medical records, t (51) = .00, p = 1.00. The range of difference scores between parent reports and medical record reports of medical visits was −3 to +3. The mean difference between parent report (M = 1.65, SD = 1.61) and medical records (M = 1.65, SD = 1.6) was zero. Considering the high correlation with medical records, and the absence of a significant difference from medical records, parent reports of children's medical use in the last six months can be considered accurate.

DISCUSSION

The objective of this study was to evaluate the accuracy of self-reports, spouse reports, and parent reports of medical utilization, as defined by agreement with medical records. Three research questions evaluated the relationship between self-report, spouse report, and parent report of medical visits and the corresponding medical records. The first research question asked, "What is the relationship between self-report of medical visits and medical visits according to medical records," and "do self-report and medical records differ significantly when reporting medical visits, and if so, how much?" The second research question asked, "what is the relationship between a spouse's report of the subject's medical visits and medical visits according the subject's medical records" and "do spousal reports and subject's medical records differ significantly when reporting medical visits, and if so, how much?" And the third research question asked, "what is the relationship between parental reports of a child's medical visits and medical visits according to the child's medical records" and "do parental reports and child's medical records differ significantly when reporting medical visits, and if so, how much?"

Results indicate that obtaining medical records to ensure the accuracy of medical visit reports may be unnecessary. Self-report, spouse report, and parent reports of medical visits were all significantly correlated with medical records in the last six months (see Table 1). Especially important is the finding that the most accurate reporting of all came from parents, r = .77. This is important to MFT researchers because it shows that one can obtain accurate medical utilization information about several people in a family from only one source. For example, if only a mother presents for participation in marriage and family therapy, and she is recruited into research involving medical use, the researchers can use her as a source of information for not only her own medical use, but that of her spouse and children as well.

Additionally, t-tests found no significant differences between spouse reports and parent reports of medical visits and medical record reports of the same. Even when considering self-reports, which were significantly different from medical records according to t-tests, the difference was not large, about

a half a visit in six months. Thus, although subjects tended to over report by .65 visits in the last six months, self-report may still be a valuable source of information for researchers.

Interestingly, as the number of medical visits increased in the last six months, subjects' self-reports became more accurate in terms of agreement with medical records. When looking at the top 25 percent of the sample in terms of medical visits in the last six months, the difference between self-reports and medical reports decreased from a statistically significant over-reporting of .65 visits in the last six months to a non-significant over-reporting of .13 visits. Thus, although self-report was found to be statistically different from medical record reports in general, the difference may not be clinically significant because it only represents over-reporting of half of a visit in the last six months. Additionally, the wording of the question in the PAQ questionnaire may have affected the over-reporting. Item 12 on the PAQ asks, "During the past six months, how many visits did you make to medical providers such as primary care or family doctors, internists, surgeons or medical specialists, physician assistants, or medical nurse practitioners? (This question refers to office or clinic visits. Please do not include visits to hospital emergency room, overnight stays in a hospital, nursing home, or other health care facility.)" This wording includes certain types of visits that may not have been counted when examining medical records because the medical records represented only visits to a primary care setting whereas providers such as "surgeons" and "specialists" may be seen outside of the primary care setting. Therefore, depending on the intended use for the information, self-reports may be a valuable source of information for researchers and provide more complete information than medical records alone. It may be then that over reporting of self-report utilization more accurately accounts for the overall picture of health care use than primary care doctors medical charts alone. For example, medical records for specialist care were not obtained and the self-reporting may have actually included such care.

Self-reports, spouse reports, and parent reports are all highly and significantly correlated with medical records. This is especially true of spouse reports and parent reports, which t-tests revealed to be not significantly different from medical record reports themselves. Therefore, because of the accuracy of "other family member" reports of medical use, MFT researchers can obtain accurate information regarding medical visits for several family members even when researchers only have access to one family member. This is particularly important considering that it is often family members other than the identified patient in therapy that experience the greatest medical offset effect (Law et al., 2003). The findings of this study suggest that MFT researchers can use spouse and parent reports to obtain accurate information regarding medical use of immediate family members during the last six-month period.

FUTURE DIRECTIONS

These findings constitute an important contribution to MFT researchers and to the field of health care in general. High correlations with medical records and a lack of significant differences between spouse reports and parent reports and medical records show that MFT and other researchers interested in health care research may be able to more efficiently study health care use and the medical offset effects. Additionally, this research can be done with limited access to multiple family members, researchers need only have access to one parent in order to get medical utilization data for several family members.

REFERENCES

Chiles, J. A., Lambert, M. J., & Hatch, A. L. (1999). The impact of psychological interventions on medical cost offset: A meta-analytic review. *Clinical Psychology: Science & Practice, 6*, 204–220.

Clark, R. E., Ricketts, S. K., & McHugo, G. (1996). Measuring hospital use without claims: A comparison of patient and provider reports. *Health Services Research, 31*, 153–169.

Crane, D.R., & Christenson, J. D. (2008). The medical offset effect: Patterns in medical utilization reductions for high utilizers of health care. *Contemporary Family Therapy: An International Journal, 30*, 127–138.

Crane, D. R., Hillin, H., & Jakubowski, S. F. (2005). Costs of treating conduct disordered Medicaid youth with and without family therapy. *The American Journal of Family Therapy, 33*(5), 403–413.

Crane, D. R., & Law, D. D. (2002). Conducting medical offset research in a health maintenance organization: Challenges, opportunities, and insights. *Journal of Marital and Family Therapy, 28*, 15–21.

Crane, D. R., Wood, N. D., Law, D. D., & Schaalje, B. (2004). The relationship between therapist characteristics and decreased medical utilization: An exploratory study. *Contemporary Family Therapy: An International Journal, 26*(1), 61–69.

Cummings, N. A. (1997). Behavioral health in primary care: Dollars and sense. In N.A. Cummings, J.L. Cummings, & J.N. Johnson (Eds.), *Behavioral health in primary care: A guide for clinical integration* (pp. 3–23). Madison, CT: Psychological Press.

Finney, J. W., Riley, A. W., & Cataldo, M. F. (1991). Psychology in primary health care: Effects of brief targeted therapy on children's medical care utilization. *Journal of Pediatric Psychology, 16*(4), 447–461.

Goodman, M., Brown, J. A., & Deitz, P. M. (1996). *Managing managed care II: A handbook for mental health professionals.* Washington, D.C.: American Psychiatric Press.

Law, D. D., & Crane, D. R. (2000). The influence of marital and family therapy on health care utilization in a health-maintenance organization. *Journal of Marital and Family Therapy, 26*, 281–293.

Law, D. D., Crane D. R., & Berge, J. M. (2003). The influence of marital and family therapy on high utilizers of health care. *Journal of Marital and Family Therapy, 29*(3), 353–363.

Moran, P. W. (1999). Psychological interventions and medical cost offset: Implications for integrative health care. *Clinical Psychology: Science & Practice, 6*, 242–244.

O'Farrell, T. J., Choquette, K. A., Cutter, H. S., Floyd, F. J., Bayog, R., Brown, E. D., et al. (1996). Cost-benefit and cost-effectiveness analyses of behavioral marital therapy as an addition to outpatient alcoholism treatment. *Journal of Substance Abuse, 8*, 145–166.

Petrou, S., Murray, L., Cooper, P., and Davidson, L. L. (2002). The accuracy of self-reported healthcare resource utilization in health economic studies. *International Journal of Technology Assessment in Health Care, 18*(3), 705–710.

Prigerson, H. G., Maciejewski, P. K., & Rosenheck, R. A. (1999). The effects of marital dissolution and marital quality on health and health service use among women. *Medical Care, 37*, 858–873.

Roberts, R. O., Bergstralh, E. J., Schmidt, L. & Jacobsen, S. J. (1996). Comparison of self-reported and medical record health care utilization measures. *Journal of Clinical Epidemiology, 49*(9), 989–995.

Rozario, P. A., Morrow-Howell, N. & Proctor, E. (2004). Comparing the congruency of self-report and provider records of depressed elders' service use by provider type. *Medical Care, 42*(10), 952–959.

Wells, K. B., Sherbourne, C., Schoenbaum, M., Duan, N., Meredith, L. Unutzer, J., et al. (2000). Impact of disseminating quality improvement programs for depression in managed primary care. *Journal of American Medical Association, 283*, 212–221.