Do widowers use the health care system differently?

Does intervention make a difference?

FRED TUDIVER, MD
JOANNE A. PERMAUL-WOODS, BSC
JOHN HILDITCH, MD
JAKE HARMINA, CCHRA(C)
SCOTT SAINI, MD

OBJECTIVE To describe the health care use patterns of widowers who had participated in a randomized trial of mutual support, and of a matched cohort of married men

DESIGN Retrospective audit of Ministry of Health use data

SETTING The family practice unit in a general teaching hospital

PARTICIPANTS The 113 new widowers (61 treatment, 52 waiting-list controls) who participated in a randomized trial of mutual support, and 111 married men matched for age

INTERVENTIONS Mutual support program

MAIN OUTCOME MEASURES Monthly rates of visits to family physicians, psychiatrists, and all other specialists for the three cohorts

RESULTS Visit rates to family physicians and specialists (SPs) for the married men were stable for the 20 months of the study; rates for the widowers rose significantly from the time of loss to the end of the intervention (for FPs, $f = 13.18$, $df = 2$, $P < .01$; for SPs, $f = 5.34$, $df = 2$, $P = .005$). Rates for FPs declined after intervention for the treatment group, but kept rising among the controls ($f = 4.17$, $df = 1$, $P = .044$).

CONCLUSIONS The decreased physician visit rate among those taking part in the mutual support program suggests that this program met some of the widowers' social support needs that would otherwise have led to the use of health care resources.

OBJECTIF Décrire l'utilisation des soins de santé faite par les veufs qui ont participé à un essai randomisé de soutien mutuel et par une cohorte appariée d'hommes mariés.

CONCEPTION Analyse rétrospective des données d'utilisation des soins fournies par le Ministère de la santé.

CONTEXTE L'unité de médecine familiale d'un hôpital général d'enseignement.

PARTICIPANTS Les 113 nouveaux veufs (61 dans le groupe traité, 52 témoins sur la liste d'attente) qui ont participé à cet essai randomisé de soutien mutuel, et 111 hommes mariés et appariés selon l'âge.

INTERVENTIONS Programme de soutien mutuel.

PRINCIPALES MESURES DES RÉSULTATS Pour les trois cohortes, taux mensuels des visites aux médecins de famille, aux psychiatres et à tous les autres spécialistes.

RÉSULTATS Pour les hommes mariés, les taux de visites aux médecins de famille (MF) et aux spécialistes (SP) sont demeurés stables tout au long des 20 mois que s'est poursuivie l'étude. Chez les veufs, les taux ont augmenté significativement entre le moment de la perte et la fin de l'intervention (pour les MF, $f = 13,18$, $df = 2$, $P < 0,01$; pour les SP, $f = 5,34$, $df = 2$, $p = 0,005$). Pour les MF, les taux après l'intervention ont décliné dans le groupe traité mais ont continué d'augmenter chez les témoins ($f = 4,17$, $df = 1,0$, $p = 0,044$).

CONCLUSIONS La baisse du taux de visites médicales constatée chez ceux qui ont participé au programme de soutien mutuel indique que cette intervention a répondu aux besoins de soutien social des veufs qui, autrement, auraient mobilisé davantage les ressources affectées aux soins de santé.

Dr Tudiver *is Associate Professor at the Primary Care Research Unit of Sunnybrook Health Science Centre and at the University of Toronto.*
Ms Permaul-Woods *is Research Associate in the Department of Family Medicine at Mount Sinai Hospital in Toronto.*
Dr Hilditch *is Associate Professor at the Primary Care Research Unit of Sunnybrook Health Science Centre.*
Mr Harmina *is Supervisor of Records Management at Sunnybrook Health Science Centre and the University of Toronto.*
Dr Saini *is a second-year resident in family practice at McGill University in Montreal.*

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THE DEATH OF A SPOUSE CAN BE detrimental to the surviving spouse's physical and mental health. A few studies have examined health care use patterns among newly bereaved women and the elderly; however, no Canadian research has studied widowed men.

A previous study of newly bereaved men examined the efficacy of a mutual help group intervention for new widowers using a randomized controlled design.[1] In that study a community sample of 113 recruited widowers bereaved less than 12 months was randomly allocated into treatment (n = 61) and waiting-list control groups (n = 52).

The treatment consisted of nine weekly semistructured peer group sessions, which focused on the grief process, diet, new relationships, exercise, and lifestyle. Analysis of variance of three psychological measures (General Health Questionnaire,[2] Beck Depression Inventory,[3] State Anxiety Inventory – State Scale[4]) and three social measures (Social Adjustment Scale,[5,6] Social Support Questionnaire[7] for both availability and satisfaction) showed significant improvement over time for all subjects, but no significant differences between the two groups over the observation period (baseline to 8 months). This implied that time, and not group allocation or the intervention, had the greatest effect on the scores.

In the same study, an additional cohort of 117 married men was randomly selected from the patient roster of a hospital-based family practice unit using a fixed-ratio block design. Each of the married men was matched for age with a recruited widower of similar age (within 2 years). Before contact was made, the medical chart of each selected married man was reviewed to ensure that he was still married and that his wife was not suffering from a serious illness. At the time of study entry, the six measures were administered to these matched married men. The result of that analysis and how it compared to the widowers is published elsewhere.[1]

For the study described by this paper, the health care use patterns of the three cohorts of the previous study (treatment, control, and matched married men) were examined for all phases of the trial. There are very few studies of health care use by widowed persons; in particular there are no published studies that describe patterns for widowers, nor, more specifically, for widowers who have participated in a mutual support intervention to help them cope with their grief. Two studies have described widowed persons' patterns of use.[8,9] We concluded that use tends to increase for those belonging to a prepaid medical plan, such as a health maintenance organization or a Canadian provincial medicare plan, whereas it does not change significantly in a traditional fee-for-service system. No Canadian studies describe any data of health care use among the widowed.

With the paucity of good data on this topic, and the availability of our study cohorts, we wished to ascertain the health care use patterns of the study populations in our previous study. In particular, we wanted to describe these data for both widowers and married men and to determine whether the intervention in that study had any impact on use.

METHODS

One hundred thirteen new widowers (conjugally bereaved for 3 to 12 months) in a large urban community had been recruited to participate in a peer-group intervention focusing on mutual support and health promotion. Within 1 week of orientation, the widowers were randomly assigned to a treatment group or a waiting-list control group. Widowers allocated to the treatment group started a 9-week intervention program within 2 weeks of assignment; widowers assigned to the

control group were asked to wait 8 months before treatment. Six different quantitative measures were applied four times during the study: at study entry, 9 weeks later at the completion of the intervention, 8 months after entry, and 14 months after entry.

Table 1. **Demographic characteristics of all subjects**

DEMOGRAPHIC CHARACTERISTICS	TREATMENT GROUP (N = 61)	CONTROL GROUP (N = 51)	MARRIED MEN (N = 109)
Average age (y)	61.5	64.6	65.9
Post–high school education (%)	46	42	67
Retired (%)	53.3	62.8	63.6
Living alone (%)	58.3	64.7	0
Months bereaved	5.6	5.3	NA
In new relationship (%)	11.5	9.8	0

For ethical reasons the waiting-list controls were offered treatment after they completed the follow-up measures 8 months after study entry. Twenty-three controls (44%) chose the intervention at the end of the waiting period. Details of the selection process, randomization procedures, intervention, data collection, and instruments are described elsewhere.[10]

Health care use

Government data. These data were based on counts of visits to physicians, not on individual services at each visit. Physician visits were determined by using the Ontario Ministry of Health (MOH) data system for the Health Service Organization (HSO) program. The HSO program in Ontario is a series of more than 90 (at the time of the study) group practices throughout the province that deliver mostly primary care service to a well-defined population. This population of patients served by the HSO is known as a roster comprising patients who formally sign a registration form that is sent to the MOH.

Each HSO can access data about their rostered patients' use of services at non-HSO health care organizations, called "negations" (other non-HSO family physicians, specialists, emergency visits, etc). A mock patient roster registration process was created for the study subjects, capturing all of their visits to physicians on the MOH database. Five of the widower subjects were patients of the Family Practice Unit of Sunnybrook Health Science Centre, a large teaching hospital in Toronto. The Sunnybrook Family Practice Unit is an HSO; use data for these subjects had to include negation data from the government as well as data by chart audit as described below.

Chart data. We extracted information from the charts of the five widowers who were patients of the Sunnybrook HSO and the 117 married men, all of whom were patients of the same HSO. As with the MOH data, these data were based on counts of visits to physicians, not on individual services at each visit. These counts were extracted from clinical notes in the charts indicating doctor visits, consultant letters, and appointments and from discharge letters from hospital departments (eg, emergency), which were all analyzed to determine actual visits to various physicians. This sort of data has been validated (Norton PG and Dunn EV, personal communication), and it correlates highly with MOH extracted data, particularly for visits to family physicians.[11,12]

Data analysis

Use rates were calculated in relation to participation in the mutual help group. Monthly visit rates for each subject were calculated for four observation periods: observation 1, the 6 months before study entry (before intervention and around the time of loss); observation 2, at the time of study entry, 2 months later (when the study participants had completed the program); observation 3, 8 months after study entry (when the waiting period for the

controls ended); and observation 4, 14 months after study entry.

Rates of use were examined by type of physician attending: family physician, any non-psychiatric specialist, or psychiatrist. An encounter with a physician on any particular day was recorded as one visit, regardless of the number of procedures performed.

RESULTS

Ministry of Health data were obtained for all 113 widowers. One control widower died during the study period. Chart data were available for all of the five Sunnybrook HSO widowers; in total we had complete data for 112 subjects. One hundred seventeen

Table 2. **Monthly use rates among general practitioners and family practitioners, specialists, and psychiatrists**

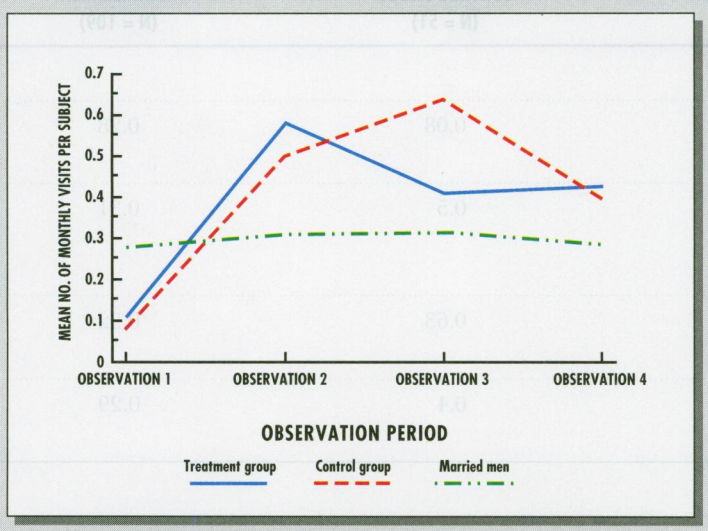
TIME AND TYPE OF VISIT	TREATMENT GROUP (N = 61)	CONTROL GROUP (N = 51)	MARRIED MEN (N = 109)
FAMILY PRACTITIONER			
Observation 1 before study recruitment (over 6 mo)	0.11	0.08	0.28
Observation 2 at 9 wk after entry when intervention ended (over 2 mo)	0.58	0.5	0.31
Observation 3 at 8 mo after entry (over 6 mo)	0.41	0.63	0.32
Observation 4 at 14 mo after entry (over 6 mo)	0.43	0.4	0.29
SPECIALIST			
Observation 1 before study recruitment (over 6 mo)	0.08	0.05	0.09
Observation 2 at 9 wk after entry when intervention ended (over 2 mo)	0.65	0.5	0.14
Observation 3 at 8 mo after entry (over 6 mo)	0.31	0.37	0.12
Observation 4 at 14 mo after entry (over 6 mo)	0.34	0.3	0.12
PSYCHIATRIST			
Observation 1 before study recruitment (over 6 mo)	0.01	0	0
Observation 2 at 9 wk after entry when intervention ended (over 2 mo)	0.25	0	0.02
Observation 3 at 8 mo after entry (over 6 mo)	0.14	0	0
Observation 4 at 14 mo after entry (over 6 mo)	0.05	0	0

All monthly rates are calculated per subject and rounded to the nearest 100th.

married men were selected; all 117 charts were available. However, during the study period three died, three moved, and two were discovered not to be patients of the practice. This left 109 eligible married subjects.

The demographic characteristics for all subjects in each of the three cohorts (treatment widowers, control widowers, and married men) are shown in *Table 1*. There were no significant differences in age or retirement rate. However, there were significantly more married men with at least postsecondary education ($\chi^2 = 9.47$, $df = 2$, $P = .009$).

Figure 1. **Rate of monthly visits to general practitioners and family physicians**



Visit rates for all subjects to family physicians, specialists, and psychiatrists are shown in *Table 2*. The visit rates for family physicians rose more than fourfold from the first observation 6 months before study recruitment – about the time of loss for most subjects – to the second observation at the end of the 2-month treatment (*Figure 1*). The passing of time affected visits to family physicians among all three groups significantly ($f = 23.13$, $df = 3$, $P < .01$), with a significant group by time interaction effect ($f = 7.25$, $df = 6$, $P < .01$). Two-way ANOVAS between each observation time between all widowers and married men were as follows: observations 1 to 2, $f = 13.18$, $df = 2$, $P < .01$; observations 2 to 3, $f = 3.18$, $df = 2$, $P = .043$; observations 3 to 4, $f = 3.87$, $df = 2$, $P = .022$. In addition, the visit rates were significantly different between married men and widowers at the second and third observations only.

Both control and treatment groups significantly increased their family physician visits monthly between observations 1 and 2 (controls, $T = -4.32$, $df = 51$, $P < .01$; treatment, $T = -4.77$, $df = 60$, $P < .01$); but there was no difference between the two groups between observations 1 and 2 ($f = .176$, $df = 1$, $P = .675$). There were, however, significant differences between the two groups between observations 2 and 3 ($f = 4.17$, $df = 1$, $P = .044$) and between observations 3 and 4 ($f = 5.05$, $df = 1$, $P = .027$).

Visit rates for specialists also rose more than fourfold from the first to the second observation (*Figure 2*). The main effect of time for all three groups was significant ($f = 11.09$, $df = 3$, $P < .01$), with a significant group by time interaction effect ($f = 2.91$, $df = 6$, $P = .035$). While the two-way ANOVA from observation 1 to 2 between all widowers and married men was significant ($f = 5.34$, $df = 2$, $P = .005$), it was not significant for the other observations. Interestingly, there was a significant difference in the rate of specialist visits between married men and all widowers at observations 2, 3, and 4 (second observation, $T = -2.92$, $df = 120.1$, $P = .004$; third observation, $T = -3.97$, $df = 156.3$, $P < .01$; fourth observation, $T = -3.22$, $df = 141.3$, $P = .001$). Both control and treatment groups had a significant increase in specialist visits monthly between observations 1 and 2 (control, $T = -2.23$, $df = 51$, $P = .03$; treatment, $T = -2.91$, $df = 60$, $P = .005$), but there was no significant effect between the two groups.

Visit rates for psychiatrists also rose, but only for the treatment group, more than fourfold from the first to the

second observation (*Figure 3*). There was only a main effect of group ($f = 3.69$, $df = 2$, $P = .027$), but there were no other significant effects.

DISCUSSION

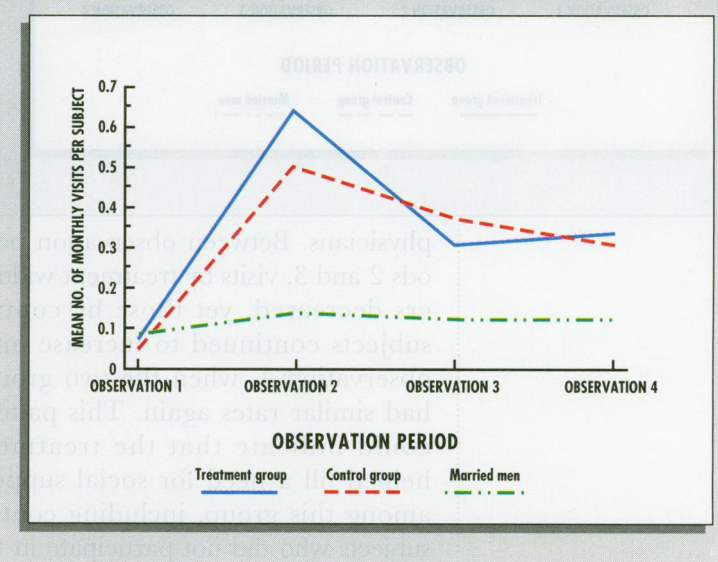
The objective of this study was to determine the health care use patterns of the treatment and control subjects in the original trial, which examined the effect of a mutual support intervention on new widowers. In particular, we wanted to compare widowers and married men and to determine whether the intervention had any effect on medical care use.

It appears that, around the time of bereavement, widowers' visit rates to family physicians and specialists were similar to the rather consistent rates found for married men. After the loss of a spouse, rates increased at least fourfold, then declined again to rates about 20 months after loss closer to but still higher than those for the married men. This finding does not agree with early studies that examined physician visits of the bereaved in the first year. Parkes and Brown[13] noted no difference in visits by young widows and widowers (younger than 45 years), and Clayton[14] found the same for older widowed persons (average age 61). These two studies, however, did not report actual rates of visits to physicians as we have, but only noted whether their subjects made any visits at all.

Our findings do agree, however, with studies of widowed persons in prepaid plans, such as the Ontario Health Insurance Plan, which covers all residents of Ontario. In a study of older London widows (average age 60 years), Parkes[8] found an increase in GP visit rates of 63% during the first 6 months of bereavement. In addition, he reported actual rates per 6-month period, as in our study. Tessler, Mechanic, and Dimond[9] described a positive association between psychological stress and the number of visits to a physician in a US-based prepaid plan. This group used actual visit rates for a 1-year period. Mor, McHorney, and Sherwood[15] examined physician visit rates by recently bereaved "primary care persons" during the first 4 months after loss. Using interview-based data from the US National Hospice Study, they found that physician visit rates were higher for the bereaved than overall rates, in particular for those older than 45 years.

There are several reasons for the increase in visits by new widowers. The time and energy involved in caregiving and hospital visits for many of these men during the late stages of their wives' illnesses could have precluded visits to their own physicians. After the deaths there could have been a pent-up demand for seeing physicians for previously "ignored" health problems. This "rebound" from a pent-up demand could also indicate that family physicians have failed to meet these male caregiver needs before their spouses' death. A second reason could be that a visit to a physician was an expression of psychological distress and a search for social support. Physicians, in particular family physicians, are one of the few readily available sources of such help in our modern culture, especially

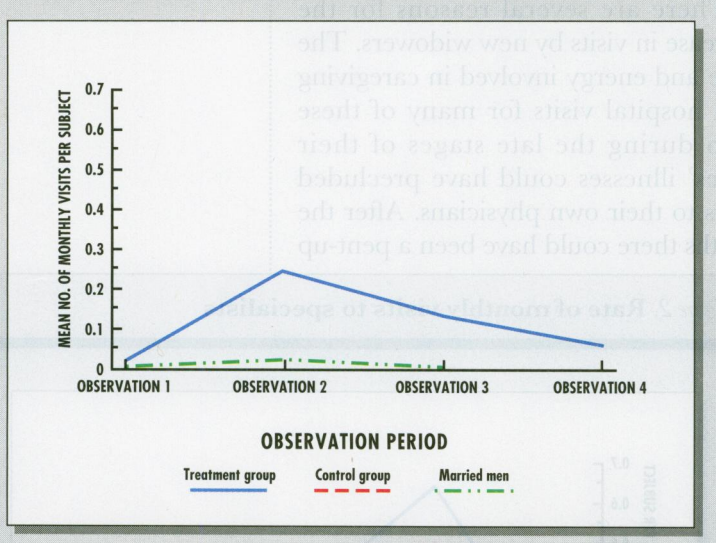
Figure 2. **Rate of monthly visits to specialists**



for the elderly.[16,17] A third reason could be that concerned caregivers, family members, and friends often recommend that new widowers see their doctors as a way to offer help.

This study suggested an association between the mutual support treatment (or intention to treat) and visit rates, in particular for visits to family physicians. Between observation periods 2 and 3, visits by treatment widowers decreased, yet those by control subjects continued to increase until observation 4, when the two groups had similar rates again. This pattern could indicate that the treatment helped fill a need for social support among this group, including control subjects who did not participate in the program until after the 8-month waiting period. It could also indicate that a source of bias is hidden to the investigators. If so, this needs to be addressed in future studies.

Figure 3. **Rate of monthly visits to psychiatrists**



However tempting, we cannot conclude a causal inverse relationship between treatment and the rate of visits. No comparable studies have explored visit rates among older men in a randomized trial of this sort, although Wan[18] has examined the effect of social support on the use of physician services. He found that functionally disabled elderly persons who received social support visited physicians twice as often as those who did not.

Gourash,[19] on the other hand, has suggested that social support acts as a buffer for the effects of stressful life events, thereby reducing the need for physician services. Krause[20] tested this "stress-buffering" aspect of social support among 351 elderly Texans. He found that subjects suffering from the stress of bereavement or "network crisis events" (events not involving a person directly) were less likely to visit physicians if they received emotional social support. Gourash's[19] and Krause's[20] findings suggest what this study indicates, that a social support intervention like that of the surviving widowers' project can reduce the need for distressed elderly persons to seek help, especially from physicians. These studies do not all agree, however, as different methods of determining social support were used.[20]

Visit rates for psychiatrists did rise for the treatment group in this study. Although there was no significant group by time interaction, we have to admit that the treatment could have triggered some of these visits, which are more costly than those to family physicians.

We recognize several limitations to this study. First, our findings are not necessarily generalizable beyond the study sample. The widowers who were initially recruited and those who agreed to take part in the program were highly selected and might not be characteristic of widowers in general. In addition, the number of subjects was rather small; we believe that the results of this study should be regarded as suggestive only, and that larger studies will be required. Second, the married men were selected from a different population with a higher level of education, and they might not be comparable to the widowers. Third, although some research has validated data extracted from charts, this research looked at charts from only family

physicians' offices, not specialists'. Fourth, we were unable to track the use of the many other counseling resources in the health care system – data that are normally kept in inaccessible databases. Perhaps, in a future study, we could request this data from the subjects themselves.

Last, there is evidence that using administrative data to assess health care use can cause problems. Aside from the obvious potential problems inherent in the accuracy, completeness, accessibility, timeliness, and coordination of such data,[21] recent articles suggest two other important problems. The first is that such data often fail to adjust for severity of illness,[22] as our data did not adjust. Weingarten et al,[22] in a study of practice patterns of internists using use data, found that adjusting for severity of illness more accurately described hospital resource use. The second problem was illustrated in a study of a large-scale health survey of sex differences in morbidity in general practice in Holland.[23]The investigators argue that many studies that assess morbidity by examining use are really measuring illness behaviour rather than illness. They suggest that researchers instead look at diagnoses over time or episodes of illness to reach more accurate estimates of morbidity (for example, three visits for hypertension over 1 year would count as one episode). All these suggestions from these recent studies should be taken into account for future work with use patterns.

This study provides some evidence that a mutual support program for the newly bereaved is associated with reduced dependence on health care, suggesting that similar programs that provide support and foster independence could save health care resources and should be encouraged. ■

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Correspondence to: *Dr Fred Tudiver, Primary Care Research Unit, Room E350, Sunnybrook Health Science Centre, 2075 Bayview Ave, Toronto, ON M4N 3M5; phone (416) 480-4753, fax (416) 480-6038*

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