

# The Effect of Social Networks and Social Support on Mental Health Services Use, Following a Life Event, among the Baltimore Epidemiologic Catchment Area Cohort

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## Abstract

The study examined the association between life events and mental health services use, accounting for social networks and social support. Main and stress-buffering effects were estimated using longitudinal data from the Baltimore Epidemiologic Catchment Area cohort (1,920 participants in 1993–1996, of whom 1,071 were re-interviewed in 2004–2005). Following a life event, the odds of using general medical services were increased by almost 50% when there was increased social support from spouse/partner (*referral function*). The odds of using mental health services within general health setup were reduced by 60% when there was increased support from relatives (*stress-reduction function*). Increased social support from friends and relatives was associated with a 40–60% decreased odds of using specialty psychiatric services after experiencing different life events (*stress-reduction function*). Overall, social support rather than social networks were more strongly associated with increased mental health service use following a life event. The implications for service delivery and program development are discussed.

## Introduction

Several studies have documented an association between mental disorders and stress, both major life-changing stressors like “life events” and more chronic stressors like daily hassles.<sup>1–5</sup> It seems reasonable to assume that once a person is stressed as a result of a life event, he/she would access

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appropriate health services, and utilization rates would vary as a function of the level of stress. However, the type of services accessed could vary according to need, the decision to use services would be dependent on many factors. Research has shown that a number of factors influence service utilization, such as patient factors, health care provider factors, societal and media-related factors, and health care organization and administration factors.<sup>6</sup> Social networks and social support are part of the societal factors that affect mental health service utilization, and it is important to know how they influence specific types of service use under different circumstances.

Social networks are the number of social contacts that one has and the frequency of interaction with them. As such, social networks are objective and quantifiable. It is through such contacts and the ties or bonds that a person has with his/her friends or relatives that one receives the help that he/she needs in times of crises. In contrast, social support is the perception that those in the network are concerned for the welfare of the individual. As a result, social support is more subjective and slightly less quantifiable. Social support acts as a coping resource and also reflects certain aspects of social and personality development. Social support is based on one's social network and is conceptually related to it.

Research linking stressful life events to actual mental health service utilization shows that social networks and social support appear to play a role in that association.<sup>7-11</sup> However, such research is limited by the number and types of life events experienced<sup>7-11</sup> and the types of services received<sup>8,9</sup> and does not clearly differentiate between social networks and social support measures.<sup>11</sup> The overall results have also been mixed. For example, Sherbourne<sup>10</sup> found that contact with a higher number of close friends and relatives was associated with reduced service use, but failed to detect any interaction between life events and social networks/social support (stress-buffering effect). Other researchers found similar results for social support.<sup>11</sup>

Different models have been posited to understand the factors that influence mental health service utilization.<sup>12,13</sup> One of the more widely used early models included *predisposing* variables like demographic factors, social structural variables, health beliefs, and attitudes; *enabling* factors like family and community resources; and *need* factors that included both subjective and clinical appreciation of need for health care.<sup>12</sup> More recently, a *network-episode model* was proposed to account for different factors that determine mental health services utilization.<sup>14</sup> The four major components of the model were the following: the *episode base* for the individual that included factors like effect of stressful events, the *social support system* that included social network structure, the *illness career* that included the period that a person was actually ill and the process of the illness, and the *treatment system* that included the factors surrounding the services sector. The current study draws on the network-episode model by exploring the associations between life events, social networks, social support measures, and four different types of mental health services use within the Baltimore Epidemiologic Catchment Area (ECA) cohort.

The analyses to be undertaken are complex, consistent with the maturity of the relevant literature and the availability of data on a range of relevant variables within the ECA study. Previous research<sup>15</sup> reported on the effect of social networks and social support on different mental health services. Life events were not included in that study. This research builds on that earlier study and examines the association between life events and mental health service use, accounting for the effect of social networks and social support. Without differentiating between social networks and social support, Gourash<sup>16</sup> hypothesized that social networks affect mental health services use by four different methods. First, they can reduce service use by buffering the experience of stress or, secondly, reduce service use by providing direct support and services that can substitute for mental health services. Thirdly, they can increase service use by directing those seeking help to appropriate referral services. Finally, they can increase or decrease service use based on the positive or negative experiences about prior services use of those within a network, which in turn would influence the kind of information that they would share. More recently, the network-episode model<sup>14</sup> posited that the social networks or social support in one's life influence the decision that a

person makes when in need of services. This influence is a dynamic process that is affected by a number of different factors including past experiences of the illness or benefits of services. However, the ultimate goal of social influences is to reduce the level of distress, either by their own supportive actions or by using other professional expertise.

To facilitate examination of the associations of underlying patterns in a way that will inform intervention, two functions for the operation of social networks and social supports are proposed: the *stress-reduction function* and the *referral function*. The stress-reduction function is the effect of social networks and social supports on reducing the psychological effect of stress, which in turn reduces the likelihood of health services or mental health service use. This function presumably operates through the beneficial effects of talking through the problem and sharing feelings with others, with reflected appraisals beneficially affecting the level of distress, as well as through material support (e.g., child care or grocery shopping) during temporary periods of impairment. Although it is possible that social networks can operate to exacerbate stress by creating demands or through negative interpersonal interactions,<sup>17</sup> this is unlikely for social support because the concept, and the wording used for its measurement, is inherently beneficial.<sup>18</sup> This logic leads us to focus on the stress-reduction function. The stress-reduction function is displayed when high levels of social networks or social support are associated with reduced use of health services. This has also been referred to as the main effect in prior literature.<sup>18</sup> While this is similar to the second hypothesis outlined earlier, it overlaps with the fourth hypothesis as it would be difficult to differentiate reduced service use because of negative attitudes toward services by the network members leading to non-referral to services.<sup>16</sup> A special case of the stress-reduction function is its operation under conditions of new stress, such as the occurrence of life events, and in this situation, the stress-reduction function shows up as an interaction, over and above a main effect, and is the well-described “stress-buffering” effect,<sup>19</sup> which is also similar to the first hypothesis proposed earlier.<sup>16</sup> However, the interaction effect can also lead to increased service use (referral function).

The referral function of social networks and social supports can be positive or negative in the effects on health care utilization. The positive referral effect occurs when individuals in the network recognize the symptoms of the individual and recommend he/she seek treatment, provide guidance to treatment resources, and/or assistance in using the supports. The negative referral effect occurs when individuals in the social network react negatively to the symptoms, reflecting feelings of stigma about mental illness, or even when the individual, correctly or incorrectly, senses those feelings and resists seeking help. Positive referral is similar to the third hypothesis of services use outlined previously.<sup>16</sup>

The stress-reduction function, and the positive and negative referral functions, may operate differently for different disorders. For example, depression may be perceived differently than panic disorder or generalized anxiety disorder by one’s friends, relatives, and spouse/partner, and this might affect the way they interact with the person suffering the life event or the advice provided. Also these functions may operate differently for different sources of health care. As a result, it was hypothesized that the effects of social networks and social support would vary across friends, relatives, and spouse/partner and would differ across the types of life events experienced and the types of mental health services used. Specifically, it was hypothesized that increased social networks and social support would be associated with decreased service use, despite the type of life event experienced. Following the same logic, fewer social networks or lower social support were expected to lead to increased service use. Both the main effect and stress-buffering effect of social networks and social support were tested.

## Method

The ECA study was conducted across five major US cities. The study began in 1978 by interviewing household and institutional residents aged 18 years or older in those five cities. In

Baltimore, information related to mental health was gathered in 1981, 1982, 1993–1996, and 2004–2005 (see previous studies for additional information).<sup>20</sup> Residents from three catchment areas of East Baltimore were included in the study based on probabilistic sampling, and at each time point, all survivors from the prior interview were designated for re-interview. Data were collected regarding socio-demographic factors, mental health, physical health, services, life events, social networks, and social support. There were 3,481 individuals in 1981, of whom 1,920 were interviewed in 1993–1996 and 1,071 in 2004–2005. All participants provided written informed consent, and appropriate ethics clearance was obtained from the Johns Hopkins School of Public Health Institutional Review Board.

For this study, data from 1993 to 1996 and 2004 to 2005 were included, and details about the study population have been provided earlier.<sup>15</sup> Pattern of missing data were first explored by conducting some preliminary analyses. About 73% of the participants in the 1993–1996 cohort who were alive in 2004–2005 were re-interviewed in 2004–2005. Of those lost to follow-up, more than half died, about 8% could not be traced, and approximately 10% refused to be re-interviewed.

### **Life events**

Questions were asked about the occurrence of the following life events within the last year of the interview: death of a loved one other than spouse/partner (which was defined as *bereavement*), *divorced and/or separated*, *had children or adopted children*, *life-threatening injury or illness*, *loss of job*, *child moved in or out of the house*, *retirement*, and *widowhood* (Table 1). The life events were selected based on prior studies.<sup>21,22</sup> The total number of life events was computed by adding all the individual life events reported in the year prior to the interview. Only two life events were found to be significantly associated with loss to follow-up between the two time points. Those not interviewed at the second time point had suffered from significantly more life-threatening illness ( $\chi^2=20.74$ ;  $p<0.01$ ,  $df=1$ ) and widowhood ( $\chi^2=6.52$ ;  $p=0.01$ ,  $df=1$ ) at the first time point.

### **Mental disorder and psychological distress**

The Diagnostic Interview Schedule (DIS)<sup>23</sup> assessed the presence of psychiatric symptoms experienced by the participants within the year prior to the interview (Table 1). A diagnosis of major depressive disorder, generalized anxiety disorder, panic disorder, and alcohol abuse/dependence disorder was made according to DSM III-R criteria.<sup>24</sup> Psychological distress within the past few weeks was determined by a General Health Questionnaire 20 (GHQ 20) score of 4 or more.<sup>25,26</sup>

### **Mental health services utilization**

The use of different types of mental health services within the past 6 months of the interview was also assessed (Table 1). As in previous work on the ECA cohort,<sup>27</sup> four groups of services were identified: *general medical services* (any care from a health professional), *mental health services within the general medical system* (use of a medical doctor or hospital emergency room or day hospital for emotional-, mental health-, or drug/alcohol-related problem), *specialty psychiatric services* (use of a mental health specialist either in a family clinic or private practice, mental health center, psychiatric outpatient clinic in either a general or psychiatric hospital or Veterans' Administration Hospital, drug clinic, or alcohol clinic), and *other human services* (consulting a religious person like a priest, family or social service, a self-help group, a crisis center, a spiritualist or natural therapist or herbalist, or other sources of help for any psychological problem). The category of general medical services was included, as many individuals with mental illnesses often manifest them initially as physical symptoms, and as a result, visit a general practitioner for

**Table 1**  
Characteristics of the study population

	1993–1996 (total=1,920), % <sup>a</sup>	2004–2005 (total=1,071), % <sup>a</sup>
Female	63.2	62.9
Age		
30–44 years	37.2	7.6
45–64 years	30.4	65.6
≥65 years	32.4	26.8
Marital status		
Married	45.1	54.3
Widowed	15.8	14.3
Separated	6.3	3.9
Divorced	12.0	13.6
Never married	13.1	10.7
Ethnicity		
White	63.2	61.8
Non-White (African American and other ethnicities)	36.7	38.2
Education (years)		
<9	19.0	9.4
9–12	52.7	49.2
13–16	23.4	32.1
>16	4.9	9.2
Insurance present	64.5	89.6
Services use		
General medical service use	65.3	79.4
Mental health in general medical services use	3.4	7.2
Specialty psychiatric services use	4.8	8.5
Other human services use	4.1	6.3
Prevalence of mental health problems in the last year		
Major depressive disorder	2.1	2.4
Generalized anxiety disorder	0.9	1.0
Panic disorder	1.2	1.8
Alcohol abuse/dependence disorder	3.1	1.4
Psychological distress	19.6	15.4
Life events in the last year		
Bereavement	28.3	24.7
Divorce/separation	1.9	1.4
Had children or adopted children	2.0	0.7
Life-threatening illness	7.1	4.0
Loss of job	4.0	2.8
Child moved in or out of the house	5.9	6.3
Retirement	1.0	3.4
Widowhood	1.3	0.8

**Table 1**  
(continued)

	1993–1996 (total=1,920), % <sup>a</sup>	2004–2005 (total=1,071), % <sup>a</sup>
Social networks		
Number of relatives		
0	1.5	1.7
1	2.3	2.5
2–4	13.3	15.0
4–6	19.1	16.8
>6	53.7	62.5
Number of friends		
0	5.8	7.0
1	7.1	7.0
2–4	27.1	26.4
4–6	20.5	22.1
>6	29.4	36.0
Frequency of meeting relatives		
Everyday	23.5	26.6
Few times/week	31.2	36.0
Few times/month	23.2	19.6
Once/month	5.0	10.0
Less than once/month	4.5	4.4
Never	0.2	0.0
Frequency of meeting friends		
Everyday	22.4	23.3
Few times/week	33.2	33.8
Few times/month	20.2	21.5
Once/month	4.4	8.9
Less than once/month	5.2	2.7
Never	4.5	0.0
	Scores	
Social support		
Social support from friends		
25th percentile	18	18
50th percentile	20	20
75th percentile	22	21
Range	7–24	9–24
Social support from spouse/partner		
25th percentile	19	19
50th percentile	20	20
75th percentile	22	22
Range	6–24	6–24
Social support from relatives		
25th percentile	18	18
50th percentile	20	20
75th percentile	22	21
Range	6–24	8–24

<sup>a</sup>Some percentages do not add up to 100% due to missing values

consultation prior to a mental health specialist. Use of general medical services was significantly ( $\chi^2=9.35$ ;  $p=0.002$ ,  $df=1$ ) more common among those in the 1993–1996 cohort who were not followed up in 2004–2005.

### **Social networks and social support**

Two sets of questions assessed social networks, and one set assessed social support; both asked for their presence within 6 months of the time of the interview (Table 1). The questions regarding social networks asked about the number and frequency (through meetings or communication by emails, post, or phone) of contacts with friends and relatives (e.g., “How often do you talk on the phone or get together with relatives who do not live with you?”).<sup>28,29</sup> Based on earlier research on network sizes in the USA,<sup>30</sup> the network size of both friends and relatives was grouped into three categories: zero to one contact, two to six contacts, and greater than six contacts. The frequency of contact with friends or relatives was grouped into *frequent* (meeting everyday to few times/month) and *infrequent* (meeting once/month to never).

The questions regarding social support were taken from the National Comorbidity Survey<sup>31</sup> and included questions such as “How much does your (husband/wife/partner) really care about you?” and “How much can you rely on your (husband/wife/partner) for help if you have a serious problem?” Parallel questions were asked regarding spouse/partner, friends, and relatives. Participants responded to six questions using a four-point Likert scale for each of the three types of support. The items inquired about both negative and positive dimensions, and the scores on the negative dimensions were appropriately reversed scored prior to forming summative scales. The total social support score ranged from 6 to 24, with higher scores indicating better support. For this study, a score above the median level represented higher social support. The median support score for friends, spouse/partner, and relatives was 20 for both the 1993–1996 and 2004–2005 time points. The analyses indicated that the level of social networks and social support at the latter time point was not affected by the *total number of life events* experienced at that time point, after adjusting for social networks and social support at the previous time point; this suggests that social networks and social support did not vary significantly within the sample, when total number of life events were considered.

### **Demographic characteristics and health status**

Information was collected about demographic characteristics (Table 1). Based on prior research,<sup>7,9–11,14,18</sup> a number of covariates were included in the statistical models: age (30–44, 45–64, and  $\geq 65$  years), sex, ethnicity (White/non-White), marital status (married/widowed/separated/divorced/never married), education ( $<9$ , 9–12, 13–16 years, and  $>16$  years), presence of any form of health insurance, presence of physical illnesses (e.g., diabetes, cardiac problems, hypertension, and arthritis) in 1993–1996 and prior to it, presence of any of the above four mental disorders prior to 1993–1996, and use of any of the above four groups of mental health services prior to 1993–1996. Prior history of mental disorders and mental health services use was adjusted in the models, as anyone with prior exposure to either of those factors might have been influenced by that experience while deciding on mental health service use. Women comprised about two thirds of the sample, and a similar proportion was White (Table 1). In 1993–1996, about 70% had more than 12 years of education.

### **Analysis**

All analyses used generalized estimating equations<sup>32</sup> with an exchangeable correlation matrix to account for repeated measures across the two time points. Initially, unweighted analysis was done.

**Table 2**

Significant patterns of association between life events, social networks or social support, and general medical services use

	Frequency of meeting friends once/month or less compared to daily (associated with reduced service use)					Higher social support from spouse/partner (associated with increased service use)				
	MDD	GAD	PD	AD	DISTRESS	MDD	GAD	PD	AD	DISTRESS
Total number of life events						×		×	×	
Bereavement		×	×					×	×	×
Had children or adopted children	×	×	×	×	×			×		
Life-threatening illness	×	×	×	×	×			×	×	×
Loss of job						×		×	×	
Child moved in or out of the house	×	×	×	×	×			×	×	×
Retirement	×	×	×	×	×			×	×	×

Results are based on weighted analysis. Multiplication signs are significant ( $p \leq 0.01$ ) main effects of social networks/support on service use, following a life event. No interaction effect was significant. Blank cells had no significant association at the specified level.

MDD major depressive disorder, GAD generalized anxiety disorder, PD panic disorder, AD alcohol abuse/dependence disorder, DISTRESS psychological distress



The association between each life event and any of the four mental health service groups was analyzed after adjusting for all the demographic and health-related covariates listed above. The models also adjusted for the different mental health conditions separately. The main and stress-buffering effects (i.e., interaction) of social networks and social support were tested through sets of multivariate hierarchical models. In model 1, a specific mental health service was regressed onto a specific life event, adjusting for the covariates (e.g., age, gender, education, etc.). In model 2, the social networks or social support measure was added to the previous model to test for its main effect on service use. In model 3, an interaction term between the life event and the social networks/social support measure was included in order to test for a significant stress-buffering effect. Parsimonious models were selected based on the lowest QIC score (quasi-likelihood under the independence model criteria).<sup>33,34</sup> Final models were selected based on the lowest QIC scores and a meaningful pattern of results across the models, as described below.

To explore whether non-response to items and attrition had an influence on the pattern of findings, all the longitudinal analyses were rerun using weights to account for item non-response and attrition across the two time points. Inverse probability weights were generated using multiple imputations, and details are provided in previous publications.<sup>20</sup> Consistent with previous research with other large-scale longitudinal datasets,<sup>35,36</sup> this study used the following two attrition weight methods. The first method used all respondents from interviews across different time points, irrespective of attrition, using the weight corresponding to the initial year of that sample (i.e., 1993–1996 weights in the current study). The second method involved including only those respondents who completed all the interviews, using the weight of the last year (i.e., 2004–2005 weights in the current study). All analyses were performed using both methods. In addition, analyses were conducted using the weights corresponding to 1993–1996 and 2004–2005 for each observation from the two time points. However, in such cases, the correlation structure between the repeated measures had to be ignored, as time-varying weights could not be computed in the current study while using correlated observations. Results were compared across all analyses, both with and without use of attrition weights.

A number of models were analyzed to estimate the association of each life event and mental health service. Each association between a life event and mental health service use was tested for the effect of seven measures of social networks and social support and five mental health conditions. Each mental health condition was modeled separately. This resulted in 35 models for each such association; therefore, a Bonferroni-adjusted, two-tailed test of significance with  $p \leq 0.001$  was used. However, the study also sought to identify meaningful patterns across the models for each life event, mental health service, social networks/social support, and mental health condition. This non-statistical method for multiple comparisons is increasingly common in the literature.<sup>37–39</sup> Consistent with previous research, the two-tailed significance level for such patterns was set at  $p \leq 0.01$ .<sup>40,41</sup> The tables report both the Bonferroni-adjusted results as well as those using a less conservative significance level ( $p \leq 0.01$ ). All analyses were performed in STATA 9.0.<sup>42</sup>

The point estimates were similar for both unweighted and weighted analyses. Since using only completers could lead to selection bias<sup>43</sup> and using the final method of time-varying weights ignored the correlation between repeated measures, the tables report the bi- and multivariate analyses using data weighted by the attrition weights of 1993–1996. However, 112 observations from 1993 to 1996 had to be dropped as they were non-responders based on the variables used for creating the weights and thus were not given a weight. As a result, the sample size for those analyses with weights was 1,808.

## Results

### Use of general medical services

Use of general medical services was significantly reduced when one met his/her friends less than once a month, was retired, and reported being psychologically distressed (OR 0.67, 95% CI, 0.50–

0.90, Bonferroni-adjusted, two-tailed  $p \leq 0.001$ ). All the other associations were not significant at Bonferroni-adjusted levels. But, meaningful patterns of such associations ( $p \leq 0.01$ ) were observed for level of regular contact with friends and social support from spouse/partner. The pattern of association varied according to the specific life event and mental health condition (Table 2) (specific estimates not shown). The models were adjusted for sex, age (30–44/45–64/>65 years), mental disorder prior to 1993–1996, physical illness in 1993–1996 or prior, mental health service use prior to 1993–1996, and health insurance. Having regular contact with a friend less than once a month was associated with a 31–35% reduction in the odds of using services following specific life events as compared to those with more frequent contacts ( $p \leq 0.01$ ) (data not shown). In other words, more frequent contact was associated with more service use—the referral function. Having higher social support from a spouse/partner was also associated with a 44–49% ( $p \leq 0.01$ ) (data not shown) increase in the odds of service use (referral function). None of the social networks or social support variables had any significant stress-buffering effect on service use.

### **Use of mental health services within the general medical setup**

Overall, higher social support from a relative was associated with a 40–50% reduction ( $p \leq 0.01$ ) in the odds of consulting a medical doctor for mental health problems across most life events and mental health conditions (Table 3). This finding supported the concept of a stress-reduction function and was similar across all life events included in this study. Most of the results were significant ( $p \leq 0.001$ ) after correcting for multiple comparisons. Higher spousal support in the presence of bereavement was associated with increased service use when suffering from two specific mental disorders: generalized anxiety disorder (OR 5.42, 95% CI, 1.53–19.20,  $p \leq 0.01$ ) and alcohol abuse/dependence disorder (OR 5.24, 95% CI, 1.49–18.38,  $p \leq 0.01$ ). This interaction effect was reflective of the *positive referral function*.

### **Use of specialty psychiatric services**

The odds of specialty psychiatric services following a life event were generally reduced by 40–60% when one had increased social support from friends or relatives (stress-reduction function). Across a number of mental health conditions, support from friends significantly reduced service use by 41–60% (Bonferroni-adjusted, two-tailed  $p \leq 0.001$ ) when faced with different life events (Table 4). This was evident especially when also suffering from major depressive disorder or panic disorder. Higher support from relatives reduced service use by 40–49% ( $p < 0.01$ ) across a number of life events and mental health conditions. Though such effects were not significant at the Bonferroni-adjusted level (specific estimates not shown), it showed that higher support from relatives played a stress-reduction function for specific combinations of life events and mental disorders, which varied from the pattern seen for support from friends or spouse/partner (Table 5). Higher support from spouse/partner was associated with reduced odds of service use ( $p \leq 0.01$ ) when one was suffering from panic disorder and was facing specific life events: *total number of life events* (OR 0.44, 95% CI, 0.24–0.80), bereavement (OR 0.44, 95% CI, 0.24–0.81), had children or adopted children (OR 0.36, 95% CI, 0.19–0.68), life-threatening illness (OR 0.44, 95% CI, 0.24–0.81), and child moved in or out of house (OR 0.37, 95% CI, 0.19–0.71) (results not shown in tables). There was, however, no meaningful interaction between life event and social networks and social support.

### **Use of other human services**

Contact with more than six friends compared to none or one friend was associated with 3–4-fold increase in the use of these services ( $p \leq 0.01$ ) when one was divorced/separate or widowed, across

different mental health conditions (Table 6). A similar increase in the odds of service use was observed when there was loss of job and one was suffering from panic disorder (OR 3.09, 95% CI, 1.33–7.18,  $p \leq 0.01$ ). This was reflective of the referral function of the increased number of friends. Again, no meaningful stress-buffering effects were observed.

## Discussion

The current study examined the association between specific life events and mental health service utilization, while accounting for different types of social networks and social support. The stress-reduction function and referral function of social networks and social support varied according to the service used. The effects also varied according to the type of social networks or source of social support, the type of life event, and the mental health condition affecting the individual. However, there was little evidence of the stress-buffering effects of social networks and social support on service use.

The findings from this study built on the earlier study<sup>15</sup> by examining how social networks and social support were associated with service use following a life event. There were some differences in the current study compared to the earlier one, such as absence of any significant effect of the frequency of meeting a relative on use of general medical services, absence of any significant effect of having more relatives in one's network for specialty psychiatric services use, and presence of beneficial effect of spousal support on mental health service use within general health setup and specialty psychiatric services. Overall, the current study identified variability in the pattern of association between social networks and social support with use of different mental health services following specific life events and across different mental health conditions.

This study reflected the complexities involved in understanding the determinants of mental health service use. Numerous factors are involved, and it is difficult to identify one simple formula to understand all types of mental health service use. The results of this study supported the study hypothesis that the effect of social networks and social support would vary across friends, relatives, and spouse/partner and also across different life events and mental health services. However, the overall effects were often similar for specific life event and specific social networks or social support across different mental health conditions. Furthermore, although in most situations the results supported the a priori hypothesis that increased social networks and social support was associated with decreased service use, the effects were not consistent across all types of services utilized and life events experienced. However, there was evidence of both a stress-reduction function and referral function.

For general medical services use, higher spousal support and increased regular contact with friends were associated with increase of such services use (referral function); higher support from relatives was associated with reduced use of mental health services within general medical services (stress-reduction function); increased social support from friends and relatives was associated with reduced use of specialty psychiatric services (stress-reduction function); and increased social contact with friends was associated with increased use of other human services especially when divorced/separated or widowed (referral function). For most services, the effects of social networks and social support were similar across different life events and mental health conditions. However, the specific life events, mental health conditions, and types of social networks and social support that were significantly associated with each service varied.

General medical services use was significantly increased ( $p \leq 0.01$ ) following specific life events when the participant had daily contact with a friend, and also when the level of social support from spouse/partner was high. Compared to mental health services use, there is relatively little stigma associated with accessing general medical services;<sup>44</sup> therefore, it is possible that those providing higher social support might be more inclined to suggest accessing medical rather than specialty mental health services following a life event. However, other factors like the availability of

**Table 3**

Association between life events, social networks or social support, and mental health services use within the general medical sector

	Higher social support from relative				
	Major depressive disorder, OR (95% CI)	Generalized anxiety disorder, OR (95% CI)	Panic disorder, OR (95% CI)	Alcohol abuse/dependence disorder, OR (95% CI)	Psychological distress, OR (95% CI)
Total number of life events <sup>a</sup>					
Model 1—LE	1.27 (1.00–1.62)	1.37 (1.08–1.76)	1.35 (1.05–1.73)	1.35 (1.06–1.72)	1.32 (1.02–1.70)
Model 2—LE	1.25 (0.98–1.60)	1.35 (1.05–1.73)	1.32 (1.03–1.70)	1.32 (1.03–1.69)	1.31 (1.01–1.69)
Model 2—SS	0.47 (0.30–0.72)**	0.42 (0.27–0.66)**	0.48 (0.31–0.73)**	0.48 (0.31–0.74)**	0.47 (0.30–0.75)**
Bereavement <sup>a</sup>					
Model 1—LE	1.21 (0.79–1.86)	1.36 (0.89–2.08)	1.26 (0.83–1.93)	1.32 (0.87–2.01)	1.32 (0.86–2.04)
Model 2—LE	1.18 (0.77–1.82)	1.32 (0.86–2.02)	1.22 (0.80–1.87)	1.28 (0.84–1.95)	1.31 (0.85–2.02)
Model 2—SS	0.46 (0.30–0.71)**	0.42 (0.27–0.65)**	0.47 (0.31–0.72)**	0.47 (0.30–0.73)**	0.47 (0.30–0.74)**
Divorce/separation <sup>b</sup>					
Model 1—LE	1.91 (0.66–5.54)	2.00 (0.71–5.65)	1.99 (0.70–5.68)	2.04 (0.72–5.78)	1.42 (0.44–4.54)
Model 2—LE	1.84 (0.59–5.74)	1.93 (0.62–5.97)	1.90 (0.62–5.84)	1.99 (0.66–6.01)	1.39 (0.40–4.85)
Model 2—SS	0.44 (0.27–0.71)**	0.42 (0.26–0.68)**	0.45 (0.28–0.73)**	0.45 (0.28–0.73)**	0.46 (0.28–0.76)*
Life-threatening illness <sup>a</sup>					
Model 1—LE	1.94 (1.06–3.54)	2.10 (1.16–3.80)	2.09 (1.16–3.79)	2.10 (1.16–3.81)	2.10 (1.16–3.81)
Model 2—LE	1.98 (1.09–3.61)	2.20 (1.22–3.94)*	2.15 (1.20–3.83)*	2.13 (1.19–3.83)	2.13 (1.19–3.83)
Model 2—SS	0.47 (0.30–0.73)**	0.42 (0.27–0.66)**	0.47 (0.30–0.72)**	0.49 (0.31–0.75)**	0.49 (0.31–0.75)**

Loss of job <sup>c</sup>						
Model 1—LE	1.49 (0.58–3.84)	1.52 (0.56–4.14)	1.66 (0.65–4.25)	1.59 (0.63–4.03)	1.53 (0.59–3.99)	
Model 2—LE	1.50 (0.57–3.93)	1.50 (0.54–4.20)	1.66 (0.64–4.33)	1.60 (0.61–4.17)	1.51 (0.56–4.03)	
Model 2—SS	0.49 (0.29–0.81)*	0.46 (0.28–0.78)*	0.51 (0.30–0.84)*	0.48 (0.29–0.80)*	0.49 (0.29–0.84)*	
Child moved in or out of the house <sup>a</sup>						
Model 1—LE	1.28 (0.63–2.63)	1.37 (0.69–2.72)	1.38 (0.68–2.80)	1.43 (0.72–2.84)	1.49 (0.72–3.06)	
Model 2—LE	1.23 (0.59–2.54)	1.31 (0.65–2.64)	1.34 (0.66–2.71)	1.36 (0.68–2.73)	1.45 (0.71–2.99)	
Model 2—SS	0.49 (0.30–0.78)*	0.44 (0.27–0.71)**	0.49 (0.31–0.79)*	0.50 (0.31–0.79)*	0.51 (0.31–0.83)*	
Retirement <sup>d</sup>						
Model 1—LE	1.18 (0.32–4.28)	0.78 (0.20–3.10)	1.17 (0.32–4.24)	1.08 (0.28–4.18)	0.89 (0.19–4.19)	
Model 2—LE	1.25 (0.34–4.64)	0.84 (0.20–3.51)	1.24 (0.34–4.58)	1.15 (0.29–4.60)	0.93 (0.19–4.60)	
Model 2—SS	0.49 (0.31–0.78)*	0.47 (0.29–0.75)*	0.50 (0.32–0.80)*	0.50 (0.31–0.80)*	0.52 (0.32–0.84)*	
Widowhood <sup>b</sup>						
Model 1—LE	1.11 (0.15–8.46)	1.14 (0.16–8.13)	1.02 (0.14–7.30)	1.16 (0.15–8.72)	0.82 (0.11–6.33)	
Model 2—LE	1.18 (0.15–9.31)	1.23 (0.16–9.18)	1.12 (0.15–8.27)	1.23 (0.16–9.67)	0.93 (0.12–7.49)	
Model 2—SS	0.44 (0.27–0.71)**	0.41 (0.25–0.68)**	0.45 (0.28–0.72)**	0.45 (0.28–0.72)**	0.46 (0.28–0.76)*	

Results are based on weighted analysis. Model 3 (included the interaction term LE×SS). Significant results are mentioned in the text

LE life events, SS social networks/support measures

\*\* $p \leq 0.001$ , Bonferroni-adjusted; \* $p \leq 0.01$

<sup>a</sup>All regressions adjusted for sex, marital status (married/previously married/never married), mental disorder prior to 1993–1996, physical illness in 1993–1996 or prior, mental health service use prior to 1993–1996, and health insurance

<sup>b</sup>All regressions adjusted for sex, mental disorder prior to 1993–1996, physical illness in 1993–1996 or prior, mental health service use prior to 1993–1996, and health insurance

<sup>c</sup>All regressions adjusted for above variables and grade (education <9/9–12/13–16/>16 years)

<sup>d</sup>All regressions adjusted for above variables and age (30–44/45–64/>65 years)

**Table 4**  
Association between life events, social networks or social support, and specialty psychiatric services use

	Higher social support from friend					
	Major depressive disorder, OR (95% CI)	Generalized anxiety disorder, OR (95% CI)	Panic disorder, OR (95% CI)	Alcohol abuse/dependence disorder, OR (95% CI)	Psychological distress, OR (95% CI)	
Total number of life events <sup>a</sup>						
Model 1—LE	1.28 (1.00–1.65)	1.31 (1.01–1.68)	1.34 (1.04–1.72)	1.24 (0.96–1.60)	1.27 (0.98–1.64)	
Model 2—LE	1.31 (1.01–1.69)	1.33 (1.02–1.73)	1.37 (1.06–1.78)	1.28 (0.98–1.65)	1.30 (1.00–1.70)	
Model 2—SS	0.50 (0.33–0.75)**	0.57 (0.37–0.84)*	0.52 (0.35–0.78)**	0.52 (0.34–0.78)*	0.59 (0.38–0.86)*	
Bereavement <sup>a</sup>						
Model 1—LE	1.12 (0.76–1.65)	1.16 (0.79–1.71)	1.15 (0.79–1.68)	1.09 (0.74–1.60)	1.12 (0.76–1.67)	
Model 2—LE	1.12 (0.76–1.67)	1.17 (0.79–1.74)	1.16 (0.79–1.72)	1.10 (0.74–1.64)	1.15 (0.76–1.73)	
Model 2—SS	0.48 (0.32–0.72)**	0.53 (0.35–0.79)*	0.50 (0.34–0.75)**	0.50 (0.33–0.74)**	0.54 (0.36–0.81)*	
Divorce/separation <sup>a</sup>						
Model 1—LE	1.88 (0.72–4.88)	2.04 (0.76–5.49)	2.04 (0.78–5.30)	1.94 (0.76–4.96)	1.56 (0.54–4.52)	
Model 2—LE	2.15 (0.83–5.57)	2.30 (0.86–6.17)	2.31 (0.90–5.16)	2.17 (0.84–5.62)	1.79 (0.61–5.29)	
Model 2—SS	0.49 (0.32–0.75)**	0.54 (0.35–0.83)*	0.51 (0.33–0.79)*	0.51 (0.33–0.79)*	0.55 (0.35–0.86)*	
Had children or adopted children <sup>a</sup>						
Model 1—LE	2.19 (0.62–7.71)	2.31 (0.64–8.31)	2.31 (0.66–8.10)	2.17 (0.59–8.03)	2.13 (0.52–8.70)	
Model 2—LE	2.24 (0.62–8.04)	2.38 (0.67–8.51)	2.42 (0.69–8.45)	2.23 (0.60–8.28)	2.20 (0.54–8.86)	
Model 2—SS	0.40 (0.26–0.62)**	0.44 (0.29–0.68)**	0.43 (0.28–0.65)**	0.42 (0.27–0.64)**	0.45 (0.29–0.69)**	

Life-threatening illness <sup>a</sup>						
Model 1—LE	1.64 (0.88–3.08)	1.55 (0.82–2.95)	1.81 (0.97–3.36)	1.63 (0.89–2.98)	1.63 (0.85–3.12)	
Model 2—LE	1.77 (0.93–3.35)	1.66 (0.86–3.22)	1.95 (1.04–3.64)	1.74 (0.94–3.23)	1.76 (0.91–3.42)	
Model 2—SS	0.48 (0.32–0.71)**	0.53 (0.35–0.79)*	0.49 (0.33–0.73)**	0.50 (0.33–0.74)**	0.51 (0.32–0.81)*	
Loss of job <sup>a</sup>						
Model 1—LE	0.99 (0.38–2.59)	1.15 (0.48–2.76)	1.09 (0.43–2.76)	0.89 (0.32–2.49)	1.11 (0.45–2.76)	
Model 2—LE	1.06 (0.41–2.77)	1.18 (0.48–2.87)	1.16 (0.46–2.89)	0.93 (0.32–2.66)	1.12 (0.44–2.85)	
Model 2—SS	0.45 (0.29–0.71)**	0.40 (0.31–0.78)*	0.46 (0.30–0.73)**	0.45 (0.29–0.72)**	0.49 (0.31–0.77)*	
Child moved in or out of the house <sup>a</sup>						
Model 1—LE	1.20 (0.65–2.23)	1.13 (0.61–2.12)	1.12 (0.58–2.18)	1.15 (0.61–2.17)	1.12 (0.59–2.14)	
Model 2—LE	1.11 (0.57–2.19)	1.03 (0.52–2.06)	1.08 (0.53–2.20)	1.06 (0.53–2.10)	1.04 (0.51–2.14)	
Model 2—SS	0.41 (0.27–0.63)**	0.45 (0.29–0.69)**	0.43 (0.28–0.66)**	0.42 (0.27–0.65)**	0.45 (0.29–0.70)**	
Retirement <sup>a</sup>						
Model 1—LE	0.85 (0.27–2.68)	0.73 (0.21–2.52)	0.94 (0.30–2.92)	0.78 (0.26–2.38)		
Model 2—LE	0.93 (0.30–2.83)	0.77 (0.22–2.61)	0.99 (0.33–2.97)	0.84 (0.28–2.50)		
Model 2—SS	0.52 (0.34–0.78)*	0.57 (0.38–0.87)*	0.54 (0.36–0.82)*	0.53 (0.35–0.81)*	NS	
Widowhood <sup>a</sup>						
Model 1—LE	1.46 (0.16–13.15)	1.51 (0.16–13.99)	1.40 (0.16–12.23)	1.50 (0.17–13.68)		
Model 2—LE	1.68 (0.19–14.72)	1.74 (0.19–15.89)	1.52 (0.17–13.34)	1.65 (0.18–14.68)		
Model 2—SS	0.50 (0.33–0.77)*	0.55 (0.36–0.85)*	0.53 (0.35–0.81)*	0.53 (0.34–0.81)*	NS	

Results are based on weighted analysis. Model 3 (included the interaction term LE×SS). Significant results are mentioned in the text  
 LE life events, SS social networks/support measures, NS the social networks/social support measure (main/interaction term) for that model was not significant at  $p \leq 0.01$   
 \*\*  $p \leq 0.001$ , Bonferroni-adjusted; \*  $p \leq 0.01$

<sup>a</sup>All regressions adjusted for sex, ethnicity (White/non-White), age (30–44/45–64/≥65 years), marital status (married/previously married/never married), mental disorder prior to 1993–1996, physical illness in 1993–1996 or prior, mental health service use prior to 1993–1996, and health insurance

**Table 5**

Significant patterns of association between life events, higher social support from relative, and specialty psychiatric services use

	Higher social support from relative (associated with reduced service use)				
	Major depressive disorder	Generalized anxiety disorder	Panic disorder	Alcohol abuse/dependence disorder	Psychological distress
Total number of life events <sup>a</sup>	×	×			
Bereavement <sup>a</sup>	×	×	×	×	
Had children or adopted children <sup>a</sup>	×	×	×	×	×
Life-threatening illness <sup>a</sup>	×	×	×		
Child moved in or out of the house <sup>a</sup>	×	×	×	×	

Results are based on weighted analysis. Multiplication signs are significant ( $p \leq 0.01$ ) main effects of social networks/support on service use, following a life event. No interaction effect was significant. Blank cells had no significant association at the specified level.

<sup>a</sup>All regressions adjusted for sex, ethnicity (White/non-White), age (30–44/45–64/≥65 years), marital status (married/previously married/never married), mental disorder prior to 1993–1996, physical illness in 1993–1996 or prior, mental health service use prior to 1993–1996, and health insurance



**Table 6**  
Association between life events, social networks or social support, and other human services use  
2–6 friends/>6 friends (reference group 0–1 friend)

	Major depressive disorder, OR (95% CI)	Generalized anxiety disorder, OR (95% CI)	Panic disorder, OR (95% CI)	Alcohol abuse/dependence disorder, OR (95% CI)	Psychological distress, OR (95% CI)
Divorce/separation <sup>a</sup>					
Model 1—LE	0.71 (0.21–2.46)	0.74 (0.22–2.43)	0.75 (0.23–2.41)	0.74 (0.24–2.33)	0.64 (0.19–2.23)
Model 2—LE	0.68 (0.19–2.37)	0.70 (0.21–2.34)	0.72 (0.22–2.35)	0.72 (0.22–2.28)	0.60 (0.17–2.12)
Model 2—SS (2–6 friends)	2.94 (1.20–7.21)	2.87 (1.14–7.23)	2.92 (1.17–7.32)	2.91 (1.17–7.21)	3.36 (1.35–8.32)*
Model 2—SS (> 6 friends)	3.41 (1.38–8.43)*	3.55 (1.39–9.04)*	3.54 (1.41–8.91)*	3.39 (1.35–8.47)*	4.27 (1.69–10.79)*
Widowhood <sup>a</sup>					
Model 1—LE	1.63 (0.21–12.57)	1.57 (0.20–12.10)	3.04 (0.67–13.81)	3.06 (0.67–14.01)	2.54 (0.49–13.20)
Model 2—LE	1.60 (0.21–11.92)	1.56 (0.21–11.36)	2.95 (0.68–12.81)	2.99 (0.68–13.14)	2.49 (0.52–11.91)
Model 2—SS (2–6 friends)	2.91 (1.19–7.12)	2.84 (1.13–7.15)	2.89 (1.16–7.25)	2.89 (1.16–7.15)	3.30 (1.33–8.18)*
Model 2—SS (>6 friends)	3.38 (1.37–0.35)*	3.52 (1.38–8.97)*	3.52 (1.40–8.85)*	3.37 (1.35–8.43)*	4.21 (1.66–10.68)*

Results are based on weighted analysis. LE life events, SS social networks/support measures

Model 3 (included the interaction term LE×SS). Significant results are mentioned in the text

<sup>a</sup>All regressions adjusted for sex, age (30–44/45–64/≥65 years), marital status (married/previously married/never married), mental disorder prior to 1993–1996, physical illness in 1993–1996 or prior, mental health service use prior to 1993–1996, and health insurance

\* $p \leq 0.01$ , weighted analysis

services, prior experiences with specific services among those in one's network, and access to services could also affect service use. Further research is needed to investigate the influence of these and other factors.

Social support was important in influencing mental health services use within the general medical setup and specialty psychiatric services use. Specifically, increased social support of a friend or relative was associated with a reduction in the odds of using these services; this is indicative of the stress-reduction function of social support for those services. These findings are consistent with early studies demonstrating a link between service use and social support. For example, a five-year longitudinal study indicated that increased social support reduced service utilization in high stress situations, especially among older men.<sup>9</sup> Sherbourne<sup>10</sup> distinguished between networks and support components of the social support construct. Although she did not find evidence to support the stress-buffering effect of social support on service utilization, she did observe a main effect of the number of close friends or relatives on reduced service utilization. Another longitudinal study of elderly people found that social support buffered the effect of stress on physician utilization, but it varied by type of service, like regular check-ups or symptom-based assessments.<sup>45</sup> More specifically, the older adults with higher social support, especially in the form of informational support, had fewer check-up visits when experiencing stress.

Contrary to social support from friends and relatives, which had a stress-reduction function and reduced use of mental health services within general medical setup and specialty psychiatric services, social support from spouse/partner had a positive referral function on use of general medical services and mental health services within general medical setup. It is hypothesized that the concern for a spouse's/partner's health and repeated advice (almost daily) to get that treated may be the cause for using such services. This seems more apparent in the few conditions where there were indications that bereavement and increased spousal support had an interaction effect that led to increased use of mental health services within the general health setup. However, spousal support was associated with reduced specialty psychiatric services use in those conditions which were found to be significant. Only future research that accounts for attitudes toward service can clarify if this is due to stress-reduction function or *negative referral function* as a result of stigma or adverse past experience with specialty psychiatric services.

Using data from the Los Angeles cohort of the ECA study, researchers found that among Mexican Americans and non-Hispanic Whites, social networks were not significant predictors of service utilization in the presence of stress, but lack of emotional support predicted higher levels of help seeking.<sup>46</sup> They also failed to find any association of help seeking with psychiatric disorders, unlike this study where the effect of social networks and social support varied according to mental disorders. This could be explained because the earlier study<sup>46</sup> had included all psychiatric disorders, while this study uses disaggregated data. Others, however, have failed to find any main effects of social support, but have found that low social support in the face of high stress is linked to higher service utilization.<sup>11</sup> The researchers weighted the type of networks based on closeness to the respondent to get a crude estimate of the quality of social support.

It is also important to note that there was no significant main effect of social support on the association between life events and use of other human services. On the contrary, regular contact with increased number of friends was associated with a 3–4-fold increase in the use of such services when facing life events, such as divorce/separation, loss of job, and widowhood. One way of understanding this is in terms of “weak ties,” which depend on the strength of interaction between individuals within one's network. For example, having a large number of contacts with whom one maintains only a superficial relationship would be considered weak ties. On the other hand, having intense and strong relationships with a few people would be considered strong ties. From a health care perspective, weak ties are a potential source of increased information about a large number of services.<sup>47</sup> Thus weak ties can have referral function, including referrals, to multiple services including non-formal services. In contrast, “strong ties” lead to better cohesion

within a group, hence better knowledge and understanding about a specific service. They can have a stress-reduction function and would also be more likely to refer to fewer services and mostly within formal sector that are more evidence-based. The difference in the strength of family and non-family network ties in relation to care providers and service use has been proposed by other researchers.<sup>48</sup> The strength of the ties and how they interact with prior experience about services, thus affecting the information shared by a caregiver, are also important factors to consider in future research. It may be helpful to examine both the network and caregivers' prior experience with services. Such experiences would influence the kind of information a caregiver would share with an individual requiring knowledge or advice about use of any type of mental health service.<sup>49</sup>

## **Limitations**

The results should be considered in the light of some limitations. As noted above, there was some loss to follow-up between the two time points. There also were some differences in the life events, pattern of mental health service use, and social networks/social support measures between those lost to follow-up and those followed up. Attrition weights were used to account for the loss to follow-up and reduce bias, but some residual bias was possible. Furthermore, the number of life events experienced, the social networks, and social support were all based on self-reports. Finally, the life events were not weighted by severity, so no inferences can be made regarding the effect of any qualitative differences in the life events.

## **Implications for Behavioral Health**

The results of this study corroborate some findings from previous studies, but also extend prior work by examining the variability in the pattern of association between different life events, social networks, social support, and mental health services in greater detail. From a health services research perspective, this study highlights the relative importance of social networks and social support in accessing services after experiencing a life event. Social networks and social support were found to have both stress-reduction and referral functions; however, those functions varied according to the services, types of networks and support, life events, and mental health conditions. It is important to note that it was not possible to delineate between negative referral function due to stigma and stress-reduction function in the current study. One way to differentiate between the two would be to account for the attitude toward services and stigma toward mental health services of those within one's network. Thus, while it is important to study the effect of social networks and social support using disaggregated information, future studies should also incorporate measures that account for stigma among those within one's network.

Social networks and social support affected service use differentially across types of services and life events. In most situations, social support from friends, relatives, or spouse/partner appeared to be more important for mental health services use than did the social networks. Although in the current study, the concepts of social network and social support have been differentiated to give a better understanding about each of them, it should be noted that the two concepts are not competing against each other, but rather are closely interlinked.<sup>50</sup> The presence of a close network of friends and relatives has the potential to provide valuable support in times of crisis. Similarly, social support received from one's spouse/partner is also helpful. Other researchers<sup>51,52</sup> have also reported the benefits of having just one confidant. Therefore, future studies should also explore other approaches for grouping the networks to determine their influence on service use.

There are several implications of this work for prevention and intervention. For example, these findings suggest that service providers should involve appropriate individuals within one's network in the treatment process. While stress reduction is beneficial, positive referral to appropriate services when needed is also necessary. From a services perspective, while it is desirable that each

individual is able to cope better with stress by drawing on the strengths within one's social networks and social support systems, it is not beneficial to avoid necessary services, when those support systems are overwhelmed, because of negative referral function as a result of stigma, adverse past experiences with services, or any other factor. Thus clinicians should always encourage their patients to recognize potential sources of social support and identify social networks, which could be mobilized to help distressed individuals access services efficiently and appropriately.

These findings also inform the current understanding of the potential processes underlying "social integration, social connectedness and community-level social cohesion."<sup>18</sup> These factors may influence the overall health status of a community. There is also some evidence to suggest the effect on mental health services use by large networks varies according to the level of perceived social support.<sup>53</sup> Additional research is needed to determine the extent to which these findings generalize to other samples of adults who may experience a different pattern of life events or mental health problems. Consistent with prior research,<sup>54</sup> select interactions between social networks and social support and gender, prior use of mental health services, and prior mental health were explored; however, no significant interaction effects were observed in the models tested. Nevertheless, the exploration of potential gender differences is an important area for future studies.

In conclusion, the findings of the current study highlight the importance of social networks and social support in accessing mental health services following a life event. Although the results varied across the different types of services utilized, as well as across the social networks and social support measures, the findings suggest that these factors have both stress-reduction and referral functions. However, the influence of social networks and social support does not appear to be constant across all service types, but rather there appears to be a dynamic process which varies across the type of services utilized. Furthermore, social support tended to have greater effect on the association between life event and mental health service utilization. Additional research is needed to better understand the effect of factors like accessibility to services, attitudes toward services, stigma, and cultural influences on mental health service use.

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