

LIFE STRESSORS AND PSYCHOLOGICAL WELL-BEING

Does Access to Health Care Help the Older Lebanese?

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ABSTRACT • Health care should protect against the detrimental effects of stress on psychological well-being by providing both direct and indirect benefits. Using a sample of 490 older Lebanese (age 60 and over), this study examines whether access to and utilization of medical care buffer the impact of specific stressors on depressive symptoms. Findings show that access to medical care is associated with depressive symptoms for those who experienced recent death, serious accident and health-related stressors and that limited access increases depression for those exposed to recent violent stressors. The saliency of health-related events may be associated with health care access which is imposed under distressing contexts, likely worsening psychological well-being.

Keywords: trauma, depression, stress, older adults, health care, Lebanese.

INTRODUCTION

The importance of psychological and social resources is well emphasized within the established Life Stress Paradigm. According to Ensel and Lin, these resources have the potential to mitigate the impact of stress on psychological well-being which allows for the survival and well-being of the individual in spite of stressful situations or circumstances [1]. Older adults may be particularly vulnerable since several stressful life events are more commonly experienced in older age [2], for example health decline and death of a loved-one, and since social networks in old age have the potential to be limited through death, retirement and social migration. Depression in particular is seen as one of the primary psychological risk factors for decreased well-being among the world's aging population [3]. Consequences of late-life depression are potentially devastating and can lead to morbidity or even suicide [4]. In addition to decreased psychological well-being, depression has been linked to physical, social and independent functioning. For example, a study by Noël and colleagues found that severity of

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RÉSUMÉ • Les soins de santé devraient prémunir, directement ou indirectement, contre les effets néfastes du stress sur le bien-être psychologique. À partir d'un échantillon de 490 Libanais âgés (60 ans et plus), cette étude examine si l'accès et l'utilisation de soins médicaux diminuent l'impact des facteurs spécifiques de stress sur les symptômes de dépression. Les résultats montrent que l'accès aux soins médicaux est associé à des symptômes de dépression chez les personnes qui ont éprouvé une mort récente, un accident grave et des facteurs de stress liés à la santé et que l'accès limité augmente la dépression chez les personnes exposées à des facteurs de stress récents et violents. L'importance des événements liés à la santé peut être liée à l'accès aux soins de santé qui survient dans des contextes pénibles, et aggravant probablement le bien-être psychologique.

depression was significantly associated with increased number of chronic conditions, physical disabilities and functional limitations [5].

It is unknown whether more organized forms of assistance, including health insurance coverage and access to health care services, can serve as significant contributors to protecting mental health following exposure to stressful experiences. These formal resources may address needs and provide services that are not necessarily readily available within informal spheres. Primary care physicians, in particular, can play a critical role in recognition and diagnosis of depression for older persons especially when no specialized mental health services are available. Medication, therapy and monitoring can decrease depressive outcomes leading to overall improvement of psychological well-being among older adults [6]. The availability of formal support services such as health insurance coverage and other structured mechanisms may serve to create a forum where dialogue can be exchanged between older patients and health care professionals, thus enabling better psychological outcomes for older persons facing challenging life circumstances. Limited availability of these resources, however, may work to increase the likelihood of exposure to stressful life events and/or inhibit the ability of the older person to cope with and manage stressful experiences, consequently leading to higher depression levels for these individuals [7].

Although older Lebanese do have considerable access to general health care services in Lebanon, a health care system specific to the needs of those with mental illness

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is not yet well-developed [8]. Further, because the Lebanese Civil War prevented the implementation of various existing regulations and policies related to a functional social and health care system for older adults [9], it is unknown what function formal resources, such as access to medical care, might play as modifying forces in the stress-depression relationship for older Lebanese exposed to negative life stressors.

This study explores the association between access to formal health care services and depressive symptoms, and investigates the moderating role of these services on the relationship between recently experienced stressors and depressive symptoms among older Lebanese adults. It is hypothesized that limited access to health insurance coverage and inadequate utilization of health care services will be associated with increased stress-related depressive symptoms.

METHODS

Data Source and Study Population

This study utilizes a cross-sectional design to test the main and moderating effects of formal health care services in the relationship between stress and depression for older Lebanese residing within economically-deprived areas. Data are obtained from the Older Adult Component of a larger project, the Urban Health Study (UHS). The UHS was administered by the Center for Research on Population Health at the American University of Beirut, Beirut, Lebanon, in 2003 [10]. Given the limited availability of population-based surveillance systems in Lebanon, especially for its older residents, this data source continues to serve as a useful analytic tool for the study's purpose. The design and conduct of the UHS are available in detail elsewhere [11]. The survey was administered in colloquial Arabic, and individual interviews were conducted face-to-face within subjects' place of residency using a structured multidimensional health-interview questionnaire specifically developed for the objectives of the study.

The study sample included those aged 60 years and older regardless of religion or legal status, and were representative of three economically disadvantaged communities (i.e. Hey el Selloum, Nabaa, and Burj al Barajneh), whose residents were formally displaced by war. Institutionalized individuals, migrant workers, and those residing within abandoned buildings were not included in the original survey. The present study was limited to Lebanese citizens ($n = 490$). Palestinian refugees who reside in Burj al Barajneh ($n = 241$) were excluded from the study analysis because they have access to free primary health care through the United Nations Relief and Works Agency (UNRWA); therefore, comparing the direct and moderating impact of formal resources on mental health between these two groups would not be possible. Further, analyses (not shown) indicate that the Palestinian refugees were significantly more depressed (mean score = 7.4 vs. 6.7; $p < 0.05$) and had greater physical disability, as

measured by the total number of limitations with activities of daily living (ADLs; mean = 6.0 vs. 2.7, $p < 0.0001$) compared to Lebanese nationals. These findings reflect the overall poorer standard of living for Palestinians residing in Lebanon.

Variables

The Arabic version of the 15-item shortened Geriatric Depression Scale (GDS-15) served as the dependent variable and was used to measure depressive symptomatology. The GDS-15 is a highly reliable scale for assessing depression among older adults [12], and has recently been validated as a highly reliable tool for measuring depressive symptoms in older Arabic-speaking populations [13-14].

Respondents were asked to evaluate each of the 15 items as experienced within the past two weeks and a composite depression score was assessed based on a summative measure of yes/no responses to the 15 items (five items were reversed coded for positive symptoms). The mean level of depressive symptoms was estimated to be 6.7 for the study sample ($SD = 3.8$; $\alpha = 0.83$, indicating relatively strong reliability among the construct items).

A total of nine life event stressors served as the main independent variables of interest. A cumulative score was assigned to each respondent based on the summation of the total number of life events experienced in the past year (range 0-9; mean = 2.9; $SD = 1.9$). Events were grouped into six conceptually distinct types: loss of loved-ones (death), work-related and financial problems (pressing loans, retirement of main breadwinner), familial conflicts (divorce, separation of children), exposure to violence (assaults, verbal abuse), health-related incidents (diagnosis of a new disease), and serious accidents (falls).

Formal resources are defined as health care support systems that serve to lessen the impact of stress on depression. These include access to medical care in times of need, availability and contact with physicians, and availability of medical health insurance. Respondents were asked whether or not they have a special place they go to when sick and whether they had a special doctor that they take advice from when sick. These variables are coded as 1 if respondents answered affirmatively and 0 if otherwise. A continuous variable is also included that measures the number of times the respondent has had contact with a physician for a health concern within the past two months. Those indicating the presence of any type of health insurance are assigned a dummy value of 1, whereas those without health insurance are assigned a value of 0. In order to measure satisfaction with these formal resources, a dummy satisfaction variable is created that indicates whether or not the respondent was satisfied with the medical services received at a particular health center (1 = satisfied; 0 = not satisfied). Finally, a dummy variable is created that serves as a proxy for access to health care services, which asks the respondent whether he or she perceives their income to be adequate in meeting the demands of living expenses, for example medical care (1 = adequate; 0 = not adequate).

Socio-demographics likely to be associated with depression served as controls in the study analyses. These included: gender, current age (measured continuously), literacy (illiterate vs. literate), working status (never worked, used to work and currently working), religiosity (very religious vs. otherwise), and area of residence. Finally, health status is measured as a composite score of limitations with activities of daily living (ADL) [15] and instrumental activities of daily living (IADL) [16].

Data Analysis

Simple frequencies and means (SD) were calculated to describe characteristics of the study sample. Item non-response error was minimal given the random nature of the missing data on most independent variables. Random missing data on the depressive symptom score were imputed through mean substitution methods. The main effects of life events and access to formal health care service resources on depression were examined using a series of regression models. The outcome variable, depressive symptomatology, was normally distributed and ordinal, therefore OLS (ordinary least squares) regression analysis was used. Models were used to assess the main effects of self-reported access to medical care, having a primary care physician, frequency of contact with doctor in the past two months, being currently insured and self-reported adequacy of income to meet daily needs. It should be noted that because satisfaction with overall medical care services did not show any statistically significant associations with depression in preliminary analyses, it was dropped from final analysis models. Using a series of separate models, interaction terms were created to test for the potential moderating roles of specific formal resources on total number of stressful life events as well as type of recent stressful life event experienced. All models were adjusted controlling for gender, age, literacy, work status, residency area, ADL/IADL difficulties and religiosity. Multicollinearity was addressed using variance inflation factor tests for all variables included in the regression models. Using relative weights to adjust for sample design, all analyses were conducted using SAS (version 8).

RESULTS

Descriptive

The sample (unweighted) includes 490 Lebanese with a mean age of 68.2 years (SD = 6.4); see Table I. Over half (58.2%) were female and approximately 41% were able to read and write. Three-quarters of the sample lived in the Beirut area of Nabaa, and over one-third considered themselves to be very religious (34.9%). The average score for functional limitations in activities and instrumental activities of daily living scale was 2.7 (SD = 4.1). Although 67.3% said they had access to medical care when needed, only half of the sample was currently insured and had adequate income to meet their expenses, and less than one-third (29.2%) said they had a particular

doctor to go to when sick. Roughly, 65% of the sample scored 5 or more for depressive symptoms, indicating likely depression.

Bivariate results indicate that depressive symptoms vary by access to select health care service indicators. Only three variables were found to have significantly different subgroup means, namely access to medical care, physician availability when sick, and health insurance coverage. Table II shows that both self-reported access to medical care (mean = 7.0; SD = 3.9) and having a primary care physician (mean = 6.4; SD = 3.9) were associated with greater depressive symptoms compared to older adults who did not have access or a primary care physician. Being currently insured, however, was associated with fewer depressive symptoms among older Lebanese (mean = 6.0; SD = 3.7) compared to the uninsured (mean = 7.3; SD = 3.8). These results indicate an association between utilization of formal services and an increase in levels of depressive symptoms. In all bivariate

TABLE I
DESCRIPTIVE CHARACTERISTICS OF THE STUDY SAMPLE
(N = 490)

VARIABLE	
Age	
Mean ± SD	68.2 ± 6.4
Range	60-95
Gender (% female)	58.2
Having a spouse (%)	64.7
Literate (% able to read and write)	41.3
Employment status (%)	
Never worked	38.5
Used to work	46.3
Currently working	15.2
Religiosity (% very religious)	34.9
Residency area	
Hey al Selloum/Burj al Barajneh	24.9
Nabaa	75.1
Total ADL/IADL	
Mean ± SD	2.7 ± 4.1
Range	0-17
Total number of life event stressors	
Mean ± SD	2.9 ± 1.9
Range	0-9
Access to medical care	67.3
Has primary care physician	29.2
Currently insured	50.0
No. times contact doctor in past 2 months	0.86 ± 1.3
Satisfied with medical care	61.7
Adequate income for expenses	54.4
Depressive symptoms (GDS)	
Mean ± SD	6.7 ± 3.8
Range	0-15
% Likely Depression (5+ symptoms)	65.0

SD: standard deviation GDS: geriatric depression scale
ADL: activities of daily living IADL: instrumental ADL

TABLE II
MEAN COMPARISON OF DEPRESSIVE SYMPTOMATOLOGY SCORE^a
ACROSS DISCRETE FORMAL HEALTH CARE SERVICE RESOURCE INDICATORS
(N = 490)

Formal Health Care Service Resources	N	Mean (SD)	t-Test value
Access to medical care	330	7.0 (3.9)	-.3.13***
No access to medical care	160	5.9 (3.6)	
Primary care physician	148	7.1 (3.7)	-.1.61*
No primary care physician	342	6.4 (3.9)	
Health insurance	244	6.0 (3.7)	3.86***
No health insurance	246	7.3 (3.8)	

^a Scores are based on the shortened version of the Geriatric Depression Scale, Range 0-15; *p*-values are based on one-tailed significance *T*-tests.
p* < 0.01 *p* < 0.01 ****p* < 0.001.

analyses, satisfaction with medical care did not reveal any significant associations or differences. More multivariate analyses and panel data are necessary to disassociate these relationships.

Multivariate

Main Effects • Main effects are observed in the relationship between formal resources and depression symptomatology for the older Lebanese adult (See Table III). It was predicted that access to and utilization of these formal health care services, for example, increased contact with a physician and access to health care insurance, would be directly associated with decreased reports of depressive symptomatology. As expected, those indicating having adequate income to meet daily needs and expenses tended to express more than two fewer depressive symptoms compared to those who do not believe that their income is adequate to meet daily needs (Model 1: *b* = -2.39, *p* < 0.001). This finding supports the underlying assumption that having sufficient means to access various resources (e.g. medical care) contributes to lower observed depression symptoms among

older Lebanese. Results also suggest that having health insurance decreases the expression of depression symptoms. More specifically, for those who indicate having medical health insurance, depression scores decrease significantly compared to those who do not have health insurance (Model 1: *b* = -1.20, *p* < 0.001). Results also indicate a significant association between depression and having a place to go to when sick, although the direction of this association was reversed. For those who report access to medical care when needed, a greater number of depressive symptoms are also reported compared to their counterparts (Model 1: *b* = 0.61, *p* < 0.05). Contact frequency with a physician in the past two months also showed similar effects on depressive symptomatology. With each additional number of advices taken from a physician in the past two months, a greater number of depressive symptoms are reported relative to those indicating less contact with a physician for advice (Model 1: *b* = 0.23, *p* < 0.05). Controlling for socio-demographics, these results are supported with a few exceptions (See Adjusted Model in Table III). The positive relationship between having access to medical care and increased contact with a physician and depression becomes statistically insignificant. Having a specific doctor to take advice from when sick (i.e. primary care physician) did not show any main effects in either model. Overall, these main effects support bivariate findings suggesting that those expressing greater utilization and contact with health care resources (e.g. physician contacts) also show a more pronounced number of depressive symptoms, whereas those who have formal resources that are more preventive in nature (e.g. health insurance, adequate income) express fewer depressive symptoms.

Moderating Effects • It is hypothesized that depending on the presence, access to and/or utilization of formal resources, the effects of life event stressors on the expression of individual depressive symptoms will vary. More specifically, those with greater formal resources

TABLE III
ORDINARY LEAST SQUARE (OLS) REGRESSION MAIN EFFECTS FOR RECENT LIFE EVENT STRESSORS AND FORMAL HEALTH CARE SERVICE RESOURCES ON DEPRESSIVE SYMPTOMATOLOGY

	Unadjusted Model		Adjusted Model	
	beta (SE)	β	beta (SE)	β
Formal Health Care Service Resources				
Access to medical care	0.61 (0.36)*	0.07	0.21 (0.34)	0.02
Primary care physician	0.26 (0.37)	0.03	0.13 (0.34)	0.01
Contact frequency with doctor	0.23 (0.13)*	0.07	0.18 (0.12)	0.06
Health insurance	-1.20 (0.32)***	-0.15	-1.15 (0.30)***	-0.14
Adequate income	-2.39 (0.33)***	-0.30	-2.22 (0.32)***	-0.28
Model Adequacy				
F-Value	15.34***			
R ²	0.29			
Adjusted R ²	0.27			

NOTES: Unstandardized (*beta*) and standardized (*β*) coefficients are reported for parameter estimates. Standard errors are in parentheses. Model adequacy refers to adjusted model. **p* < 0.05 ***p* < 0.01 ****p* < 0.001
The adjusted model includes variables that control for gender, age, literacy, current work status, residency, number of ADL/IADL difficulties and religiosity.

TABLE IV
INTERACTION EFFECTS FOR FORMAL HEALTH CARE SERVICE RESOURCES AND NUMBER OF LIFE EVENT STRESSORS AS PREDICTORS OF DEPRESSIVE SYMPTOMATOLOGY

	TLE ^a beta (SE)	Adjusted Models ^b beta (SE)	R ²	Adjusted R ²
Access to medical care	0.59 (0.16)***	1.24 (0.60)*		
Primary care physician	0.34 (0.11)***	0.08 (0.63)		
Contact frequency with doctor	0.31 (0.11)**	0.06 (0.22)		
Health insurance	0.50 (0.13)***	-0.69 (0.56)		
Adequate income	0.26 (0.12)*	-2.44 (0.57)***		
Access to medical care x TLE		-0.31 (0.19)	0.21	0.19
Primary care physician x TLE		0.15 (0.20)	0.21	0.19
Contact frequency with doctor x TLE		0.08 (0.07)	0.21	0.19
Health insurance x TLE		-0.23 (0.17)	0.23	0.22
Adequate income x TLE		0.04 (0.17)	0.28	0.27

NOTES: Unstandardized (*beta*) coefficients are reported for parameter estimates in all models. Standard errors are in parentheses.

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

^aTotal Number Recent Life Events ^bAll models are adjusted and include variables that control for gender, age, literacy, current work status, residency, number of activities of daily living difficulties and religiosity.

TABLE V
INTERACTION EFFECTS FOR ACCESS TO MEDICAL CARE AND TYPE OF RECENT LIFE EVENT STRESSOR AS PREDICTORS OF DEPRESSIVE SYMPTOMATOLOGY

	Adjusted Models ^b beta (SE)	R ²	Adjusted R ²
Access to medical care x Death event	1.83 (0.66)**	0.19	0.17
No access to medical care x Death event	1.56 (0.69)**		
Access to medical care x No death event	1.73 (0.68)		
(No access to medical care x No death event)	-		
Access to medical care x Work/Financial event	0.84 (0.47)*	0.19	0.17
No access to medical care x Work/Financial event	0.79 (0.67)		
Access to medical care x No work/Financial event	0.70 (0.41)*		
(No access to medical care x No work/Financial event)	-		
Access to medical care x Relationship event	-0.37 (0.79)	0.19	0.17
No access to medical care x Relationship event	-1.51 (0.73)*		
Access to medical care x No relationship event	-0.75 (0.71)		
(No access to medical care x No relationship event)	-		
Access to medical care x Health event	1.17 (0.46)**	0.19	0.17
No access to medical care x Health event	0.97 (0.91)		
Access to medical care x No health event	0.43 (0.39)		
(No access to medical care x No health event)	-		
Access to medical care x Violent event episode	1.03 (0.53)*	0.19	0.17
No access to medical care x Violent event episode	1.66 (0.78)*		
Access to medical care x No violent event episode	0.78 (0.38)*		
(No access to medical care x No violent event episode)	-		
Access to medical care x Serious accident event	1.38 (0.47)***	0.20	0.18
No access to medical care x Serious accident event	0.48 (0.62)		
Access to medical care x No serious accident event	0.31 (0.42)		
(No access to medical care x No serious accident event)	-		

NOTES: Unstandardized (*beta*) coefficients are reported for parameter estimates. Standard errors are in parentheses.

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

^bAll models are adjusted and include variables that control for gender, age, literacy, current work status, residency, number of activities of daily living difficulties and religiosity.

will report fewer depressive symptoms in the face of negative life event demands. In order to assess the moderating effects of formal resources, interaction terms were created between formal resource indicators and total number of recent life event stressors (TLE). Two interaction terms revealed statistically significant associations with depression outcomes (See Table IV). Namely, the positive effects between number of recent stressful life events and depressive symptoms were reduced by approximately 0.90 point with the addition of the interaction term signifying access to medical care and number of stressful life events (Model 1: $b = -0.31$; $p < 0.10$). With every additional life event experienced, persons with access to medical care report about 0.31 fewer depressive symptoms compared to those who do not have a place to go to when sick. Results also indicate that for those with health insurance, depression scores decrease with each additional life event experienced. With the addition of the interaction term to the model, the positive effects between number of life events and depressive symptoms are reduced by nearly 0.73 point, although results were only marginally significant (Model 4: $b = -0.23$; $p < 0.10$). No other moderating effects were observed for other health care resource variables and total number of life event stressors. For theoretical variables of interest, moderating effects were assessed using the interaction between access to medical care and specific life event stressors.

Analyses indicate that having access to medical care interacts to differentially influence the positive effect of specific life stressors on depressive symptomatology (See Table V). For example, for those experiencing a recent death event, having access to medical care when needed increases depression scores by about 1.83 point (Model 1: $b = 1.83$; $p < 0.01$) compared to those without access to medical care or experience of a recent death event. In contrast, those with no access to medical care report 1.56 more depressive symptoms in the face of a recently experienced death-related event ($b = 1.56$; $p < 0.01$). A similar result is observed for the interaction between medical care access and health-related stressor. For those with a recently experienced health stressor, having access to medical care increases depression levels by about 1.17 compared to those with no medical access and no health-related event(s) (Model 4: $b = 1.17$, $p < 0.01$). Contrary to expectations, these latter findings suggest that the positive effects between recently experienced stressors and depressive symptoms are exacerbated for those with increased access to medical care. On the other hand, some findings support the notion that access to medical care may work to lessen the psychological impact of violent stressful events, such as physical assaults or other intentional harm. Of those who report not having a place to go to when sick, the effect between violent event stressors and depressive symptoms increases by approximately 1.6 (Model 5: $b = 1.66$, $p < 0.01$). Thus, depending on the nature of the stressor experienced, access to medical care may either work to lessen or increase the positive impact of stressors on current depression levels for the

TABLE VI
IMPROVEMENT OF MODEL FIT
USING F-TESTS FOR STUDY INTERACTION MODELS

Interaction Terms	F-test value	N	D.F.
Access to medical care x TLE ^b	1.81*	486	11
Access to medical care x Death event	3.42***	486	11
Access to medical care x Violent event	2.36*	486	11

NOTES: Models reported refer to those with F-test p -values ≤ 0.05 .

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

^bTLE refers to total number of recent negative life events experienced.

older Lebanese. Of the seven interaction models showing statistical significance, two showed an improvement of model fit with the addition of interaction terms (See Table VI).

In general, results provide evidence for an independent as well as moderating role for formal health care service resource factors. Analysis suggests that older Lebanese individuals with health insurance coverage and adequate income to meet daily needs report a decreased number of depressive symptoms, whereas those with access to medical care or a primary care physician report an increased number of depressive symptoms. Additionally, a moderating effect is shown which indicates that when faced with an increasing number of stressful life events, both access to medical care and having health insurance provide psychological relief from the effects of these additive stressors. Finally, depending on the specific life event experienced, access to medical care may either increase or decrease the positive effects of the stressor on depression outcomes.

DISCUSSION

This study uses the tenants of the Life Stress Paradigm to investigate the protective role that formal resources play in the stress-depression relationship. Formal resources specifically provide access to health care services that work to protect against the negative impacts of stressful situations by creating a forum that allows health care workers and other professionals to provide formal services that address mental health needs. These health care resources have the potential to diagnose and/or treat mental health issues that arise from exposure to adverse situations or events in older age.

Proxies for these formal resources employed in this study include health care insurance, physician access and contact, medical care access and sufficient financial means to access these resources. It was hypothesized that access to and utilization of these formal health care service resources would have an independent and negative relationship with depressive symptoms, and that these formal resources would work to buffer the impact of number and type of stressful events on depressive symptoms. The findings from this study provide mixed support for the protective role of formal health care services.

Results show that proxies for access to health care resources, including medical health insurance and adequate income to meet daily needs, were strongly and negatively associated with depression levels. Older Lebanese who report having health insurance and financial means to access health care reported fewer depressive symptoms compared to older adults who did not have insurance or adequate income. These findings support the idea that greater potential access to health care services, like health insurance and adequate income to access such resources, function to counteract depressive symptoms [9].

On the other hand, individuals reporting increased contact with a physician in the past two months tended to express higher levels of depressive symptomatology compared to those with fewer physician contacts. This finding appears to suggest that older Lebanese with greater utilization of health care services are more susceptible to the expression of depressive symptoms, and that physician contact somehow worsens psychological well-being. A more likely interpretation may be the limitations of the cross-sectional data employed in this project, which do not allow discerning the causal direction of these relationships. For example, it may be that individuals with greater psychological impairment are more likely to utilize health care resources, especially since the literature points to increasing comorbidity of physical disabilities and mental health needs [17]. Overall, these results provide evidence suggesting that, in addition to presence of informal social resources as specified in the Life Stress Paradigm, for example family/friend support, access to formal health care service resources are important considerations in addressing psychological health outcomes of older adults. Lebanese practitioners in the primary care setting would benefit from administering mental health screeners to their patients in order to detect, treat and/or refer at-risk patients for specialized mental health services [18].

This study also found that formal health service factors had a tempering effect in the relationship between number of stressful life events and current depressive symptomatology for older Lebanese adults. More specifically, study results show that those faced with an additional number of life stressors, access to medical care as well as having medical health insurance lessen the burden of daily stressors on mental health. Similar to informal social resources, health care professionals may serve a secondary function by strengthening the older person's coping skills required to manage adverse life stressors. The role of primary care physicians in recognizing, diagnosing, and treating depression among older persons who are faced with challenging life situations should be acknowledged, especially among those tasked with training medical care professionals [19]. Access to formal resources from primary care physicians is especially crucial in Lebanese society where the stigma attached to mental illness prevents many from seeking specialized mental health care services. Limited access to health insurance and/or medical care may exacerbate psychological condi-

tions, especially when the older adult is challenged with an accumulated number of stressful situations [20].

Contrary to expectations, results show that access to medical care may actually worsen the effects of specific types of life stressors on individual psychological well-being. For example, although findings show an independent and positive association between experiencing death of a loved-one, serious accidents and health-related stressors and depression levels, the data also indicate that access to medical care may actually exacerbate this positive relationship. These latter results suggest that older persons with medical care access are more psychologically susceptible to the negative consequences of these specific stressors than those without such access. An alternative explanation may be that older individuals with access to medical services may have been forced to seek such services prior or during exposure to these specific health-oriented events. Therefore, rather than having a protective role, medical access may actually interact to worsen depressive symptoms because of the negative implications associated with the point of service. The data do not allow measurement of this assumption. Nevertheless, these findings emphasize the saliency of the stressor in determining the protective role of specific health care services. Physicians in Lebanon would benefit from understanding the context and circumstances under which the older adult seeks care which may shape the treatment options and decisions related to his/her health care.

Overall findings from this study support the notion that formal health care service resources interact differently in the stress-depression relationship. Similar to the role that informal social support factors play, formal resources, such as health insurance, were found to have important moderating functions in reducing the positive impact of stress on depressive symptoms. It is argued that these formal services address needs beyond the capacity of informal support networks. While the Life Stress Paradigm acknowledges the importance of psychosocial resources in reducing the effects of stressors on psychological distress, the results of this study indicate that a broader definition should be applied to other resources and their contributing roles in the stress-distress relationship. The study findings also indicate that access to health care may actually exacerbate depressive symptoms, depending upon whether a serious health event is experienced by the older adult. This means that older adults who are forced to seek access to health care under stressful, life-threatening situations may not necessarily benefit from the protective role that is provided compared to older adults who may use health care services in a more preventative capacity. Interventions are needed within Lebanon's primary care and emergency response settings to identify which older patients are more at risk for developing serious psychological illnesses following exposure to specific health-related events.

Differentiating between informal social resources, such as availability of a spouse, children or other confidants [21], and more formal sources of support, such as

access to a physician when sick, is important to understanding the extent to which specific types of resources intervene to influence the relationship between stress and depression. Given that formal resources may serve as proxies for socioeconomic status (e.g. health insurance), future research should focus on how the utilization of these resources influence psychological outcomes after controlling for social and economic background. Future work is also needed to investigate the extent to which poor mental health outcomes may lead to increased probability of exposure to stressful life events. For example, it may be that older persons who are more depressed tend to seek out and utilize more formal health care support services (e.g. physician contacts). Given the cross-sectional nature of this study's data, it was not possible to discern the direction of causality.

Finally, for older adults living in Lebanon, specific national health policies are needed to encourage utilization of formal health care services, especially for vulnerable subgroups exposed to stressful life events. More emphasis is needed to educate older adults on the etiology and significance of poor mental health. Recent literature has documented the strong association between unwillingness to discuss feelings of depression with a doctor and attribution of depression to "old age" rather than a physical illness [22]. As the first line of defense, physicians, nurses and other health care providers in Lebanon can fill in this knowledge gap by providing legitimacy to mental health as a public health concern. Addressing societal stigmas attached to mental illness as well as educating both physicians and Lebanese families regarding the impact of mental health on overall well-being is an important first step to encouraging use of formal health care services for vulnerable older subgroups residing in Lebanon.

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