

# CURRENT RESEARCH IN SOCIAL PSYCHOLOGY

---

Volume 3, Number 8

Submitted: October 8, 1998

Resubmitted: December 9, 1998

Accepted: December 9, 1998

Publication date: December 17, 1998

## DAILY EVENTS AND PHYSICAL SYMPTOMS: EFFECTS OF EVENT TYPE, OPTIMISM, PESSIMISM, AND HEALTH BEHAVIORS

Antonia C. Lyons

School of Psychology

University of Birmingham

Birmingham, United Kingdom

Kerry Chamberlain

Department of Psychology

Massey University

Palmerston North, New Zealand

### ABSTRACT

*Recent research shows that upper respiratory tract infections (URIs) and reported URI symptoms are influenced by minor events. We sought to replicate and extend this research by assessing desirable and undesirable events (uplifts and hassles) separately, as well as general and interpersonal events, and by examining the role of optimism, pessimism and URI health behaviors as moderators of these effects. 165 participants provided data on optimism, pessimism and URI health behaviors, and on hassles, uplifts, and physical symptoms on two occasions, one week apart. Results demonstrated that both interpersonal and general hassles and uplifts were related to URI symptoms, but in different ways. General hassles and uplifts were positively related to symptoms while interpersonal uplifts were negatively related to symptoms. Pessimism interacted with interpersonal hassles to affect total symptoms reported, such that these events were more strongly related to symptoms among people who were not very pessimistic. Typical URI health behaviors did not moderate the link between minor events and symptoms, although uplifts were positively but weakly associated with these behaviors. Assessing different types of both desirable and undesirable events independently when examining their relationship with symptoms and behaviors may be particularly useful in future work.*

[88]

[89]

### INTRODUCTION

A number of prospective, naturalistic studies have demonstrated a relationship between the experience of minor daily events and the onset of upper respiratory tract infections (URIs) and somatic symptoms (Stone, Reed & Neale, 1987; Evans, Pitts & Smith, 1988; Evans & Edgerton, 1991; Lyons & Chamberlain, 1994; Sheffield, McVey & Carroll, 1996; Cobb & Steptoe, 1996). Within-subjects studies have examined when an individual will become ill following a change in the experience of minor events, finding an increase in undesirable (Stone et al., 1987) and a decrease in desirable events (Stone et al., 1987; Evans et al., 1988; Evans & Edgerton, 1991) during the four days preceding illness episodes--although Stone, Porter & Neale (1993) failed to replicate these findings. On the other hand, between-subjects studies have sought to examine whether the level of events experienced could determine which individuals become ill. Between individuals, undesirable events have been found to relate positively to somatic symptoms three to four days later (Sheffield et al., 1996), and both undesirable and desirable events have been positively related to URI symptoms two weeks later but not to non-URI symptoms or self-rated health (Lyons & Chamberlain, 1994). This diversity of findings raises a number of issues which warrant further investigation.

## DISCUSSION

The present study was designed to address issues regarding the relationship between minor stressors and self-reported URIs between individuals. Firstly, it sought to determine whether specific types of event (namely, positive or negative, interpersonal or other) have differential effects on reported URI symptoms. Previously, studies measured minor events such that any specific event could only be classified either as a hassle or as an uplift. However, over a given period of time an event could be both desirable and undesirable (Lazarus, 1984). For example, over the past day your job could be a source of both hassles and uplifts. Therefore, in this study events were measured as both potential hassles and uplifts in order to investigate their relative effects on URI symptoms. Further, some types of events may have more of an effect on resistance to infectious illness than do others. Interpersonal events in particular have been implicated. A within-subjects study (Evans & Edgerton, 1991) demonstrated the importance of interpersonal events in a post hoc subsidiary analysis. A between-subjects study (Lyons & Chamberlain, 1994) showed that although interpersonal events did not affect URI symptoms directly, interpersonal hassles did relate to URIs when optimism was taken into consideration. Interpersonal hassles were more strongly related to symptoms for optimists than they were for pessimists. Further, social network ties have recently been found to influence susceptibility to the common cold in healthy adults, such that those with more types of social ties had greater resistance to the infectious illness (Cohen, Doyle, Skoner, Rabin & Gwaltney, 1997).

[89]

[90]

Secondly, this study sought to examine possible factors which might influence the relationship between minor events and reported URIs. Most studies in this area are based upon "main effects" models and ignore possible moderating factors which may buffer the relationship between minor daily events and onset of URI symptoms, such as particular personality characteristics or typical behaviors (Cobb & Steptoe, 1996). Optimism has been shown to moderate the relationship of interpersonal hassles on URI symptoms (Lyons & Chamberlain, 1994), and we sought to replicate this relationship. Optimism in this study was assessed by the Life Orientation Test

(LOT, Scheier & Carver, 1987), a well-known measure of dispositional optimism. However, correlations between the optimism and pessimism subscales of LOT over several different samples do not warrant consideration of optimism and pessimism as a single bipolar construct (Dember, Martin, Hummer, Howe & Melton, 1989; Mroczek, Spiro, Aldwin, Ozer & Boss, 1993). Factor analytic studies also conclude that optimism and pessimism as assessed by LOT are empirically distinct (Chang, D'Zurilla, Maydeu-Olivares, 1994; Marshall, Wortman, Kusulas, Hervig & Vickers, 1992). Optimism and pessimism also have been shown to have independent associations with external variables, suggesting that they are separate constructs (Mroczek et al., 1993; Marshall et al., 1992). Therefore we hypothesized that both optimism and pessimism would moderate the relationship between interpersonal events and URI symptoms.

Another factor which may moderate the relationship between minor events and reported URIs is the typical health behaviors people engage in when they feel they are catching a cold (e.g., see a doctor, rest more than usual, take throat lozenges). The number of minor events experienced may be related to an increase in the severity of URI symptoms, especially among individuals who do not typically take behavioral action when suffering from a URI. Therefore, the present study developed and incorporated a measure of typical URI health behaviors to examine the moderating role of these behaviors on the experience of symptoms.

Finally, as mentioned above, studies demonstrate that experiencing a change in the frequency of minor events is related to infectious illness symptoms a few days later. This time period is similar to the incubation period of many common cold viruses (Smith, Tyrrell, Coyle & Willman, 1987), and it has been argued that minor stressors may influence secretory IgA which defends against such viruses (Stone et al., 1994). Therefore, we expected that over a over a one week period, minor daily events (interpersonal and other hassles and uplifts) would be related to URI-specific reported symptoms but not to other kinds of symptoms, and that this relationship would be moderated by optimism, pessimism and typical URI health behaviors.

[90]

[91]

## **METHODS**

### **Participants**

Participants were 219 undergraduate psychology students, 161 (73%) females and 58 (27%) males, with a mean age of 21.7 years ( $SD = 4.98$  years). Follow-up data was obtained from 165 of these participants (120 females and 45 males). There were no differences between the remaining participants and those who dropped out in terms of their sex, age, symptoms reported, self-rated health, and hassles and uplifts experienced. However, the follow-up participants were slightly less optimistic ( $t = 2.35$ ;  $p < .05$ ) and reported engaging in significantly more URI health behaviors ( $t = 2.79$ ,  $p < .01$ ) than those who did not complete the study.

Undergraduate students are an accessible and appropriate population for a study that focuses on minor daily stressors. As a population they experience few traumatic events (Schulz & Rau, 1985) but do experience the normal range of variations in stress that people experience in everyday life (Chamberlain & Zika, 1990).

## Procedure

Participants were recruited through second and third year psychology classes. Each person completed a questionnaire in class containing measures of physical symptoms, URI health behaviors, optimism, minor events, age and sex. Exactly one week later participants completed a second questionnaire which included physical symptoms and minor events measures. Symptom reports were obtained during winter in order to maximize the extent of URI experience in the sample.

## Measures

*Physical Symptoms:* Physical symptoms were measured with the Pennebaker Inventory of Limbic Languidness (PILL; Pennebaker, 1982), a 54 item self-report inventory tapping the occurrence of a large number of common physical symptoms and sensations. The response format was modified to a severity rating, and items were divided into two subscales assessing URI symptoms (35 items) and non-URI symptoms (19 items) based on ratings provided by two general practitioners. Cronbach's alphas for these subscales were .90 and .68 respectively, and were highly similar to reliabilities reported previously (Lyons & Chamberlain, 1994). Participants were asked to indicate how much each item had bothered or disturbed them during the previous week on a five point scale from not at all to extremely.

[91]

[92]

*URI Behaviors:* 32 psychology students who did not participate in the main study provided open-ended reports about their health-related behaviors during URI episodes. These were classified by the researchers to remove synonyms and analogous behaviors, resulting in a final list of 15 different behaviors, such as "take cold/flu tablets", "take cough mixture/lozenges", "rest more than usual", and "see a doctor". Participants responded to this checklist of typical URI behaviors by indicating "how often you engage in each behavior when you have a cold or the flu" on a five-point scale (never to always). Scores were obtained by summing responses across items.

*Optimism:* Dispositional optimism was assessed by the Life Orientation Test (LOT; Scheier & Carver, 1985). This measure has good internal reliability (.76) and test-retest reliability (.79 over four weeks), and is associated with conceptually related scales (Scheier & Carver, 1985). A bipolar optimism score was obtained by summing all items, and specific optimism and pessimism scores by summing the positive and negative items separately. Cronbach's alphas for these measures were .74, .69, and .73, respectively.

*Minor Events:* Minor events were assessed with the revised version of the Hassles and Uplifts Scale (DeLongis, Folkman & Lazarus, 1988), a 53 item checklist identifying a broad range of everyday events. Items relating to work, finance and transport were modified to make the scale more appropriate for a student sample. Participants rated each item twice, as both a hassle and an uplift over the past week, on a four-point Likert scale ranging from "not at all or not applicable" to "a great deal".

To examine the effects of interpersonal events, items on the Hassles and Uplifts Scale were classified into two categories, interpersonal events and other events. The interpersonal hassles

and uplifts subscales each consisted of 13 items, with Cronbach's alphas of .68 and .67 respectively.

## RESULTS

### Bivariate Analyses

Means and standard deviations of the independent variables, and their inter-correlations, are presented in Table 1. General hassles and uplifts had weak, positive relationships with each other. The interpersonal measures were uncorrelated with each other, but had weak, positive relationships with general hassles and uplifts. Optimism and pessimism were highly correlated with total scores on LOT but only weakly with each other, supporting previous findings with subscores from this scale (Mroczek et al., 1993), and confirming the decision to include these separate measures in the analyses. Bipolar optimism, optimism and pessimism scores were all weakly correlated with the hassles and uplifts variables in expected directions. Health behaviors were largely unrelated to the variable set, being weakly correlated only with uplifts measures.

[92]

[93]

**Table 1: Correlations, Means and Standard Deviations among Hassles, Uplifts, Optimism, Pessimism and Health Behaviors at Time 1 (N = 178)**

	General Uplifts	Interpersonal Hassles	Interpersonal Uplifts	LOT	Optimism	Pessimism	Health Behaviors	M	SD
<b>General Hassles</b>	.32***	.54***	.26***	-.21*	-.13	.21**	.12	29.41	13.65
<b>General Uplifts</b>	--	.22**	.55***	.22*	.16*	-.20**	.16*	27.61	14.05
<b>Interpersonal Hassles</b>		--	.17	-.27*	-.23**	.19*	.09	6.10	4.45
<b>Interpersonal Uplifts</b>			--	.29*	.24**	-.23*	.20*	14.67	5.93
<b>LOT</b>				--	.82**	-.80**	-.02	29.30	4.06
<b>Optimism</b>					--	-.30**	-.01	14.07	2.57
<b>Pessimism</b>						--	-.00	8.76	2.45
<b>Health Behaviors</b>							--	24.56	8.60

\*  $p < .05$  \*\*  $p < .01$  \*\*\* $p < .001$ ;

Correlations between the health, minor events and dispositional variables are given in Table 2. Hassles, both general and interpersonal, were associated positively with all symptom measures at moderate levels, whereas general uplifts were only weakly associated with symptoms at Time 2. Bipolar optimism was weakly correlated with all symptom measures. However, relationships between optimism and pessimism demonstrate that this was due mainly to optimism rather than pessimism. Finally, health behaviors were correlated with total symptoms and with URI symptoms, but not non-URI symptoms, at Time 1. Health behaviors did not relate to any symptom measure at Time 2, however. These findings provide further evidence to support the distinction between URI and non-URI symptom measures, and for the separation of bipolar optimism into discrete measures of optimism and pessimism.

[93]

[94]

**Table 2: Correlations Between Minor Events, Optimism, Pessimism and Health Behaviors at Time 1 with Health Measures at Times 1 and 2**

IVs	Time 1 Symptoms (N = 175)			Time 2 Symptoms (N = 131)		
	Total	URI	Non-URI	Total	URI	Non-URI
<b>General Hassles</b>	.31***	.27***	.33***	.36***	.33***	.34***
<b>General Uplifts</b>	.03	.00	.12	.22*	.20*	.19*
<b>Interpersonal Hassles</b>	.26***	.22**	.25**	.30**	.28***	.28***
<b>Interpersonal Uplifts</b>	.05	.04	.03	.02	.00	.04
<b>LOT</b>	-.21**	-.20*	-.16*	-.33***	-.32***	-.21*
<b>Optimism</b>	-.21**	-.21**	-.09	-.30***	-.31***	-.17*
<b>Pessimism</b>	.13	.10	.17*	.22*	.21*	.17*
<b>Health Behaviors</b>	.20**	.20**	.13	.11	.08	.15

\*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$

### Multivariate Analyses

Age was highly skewed in this student population, and therefore was recoded into a dichotomous variable (over 20 years, 20 years and under). Age and sex were related to each other ( $r = -0.23$ ,  $p < .001$ ), but were not associated with any health measure. Women reported typically engaging in more URI health behaviors ( $t = -2.87$ ,  $p < .01$ ), as did those over 20 years ( $t = 2.33$ ,  $p < .05$ ).

Women also reported more interpersonal uplifts ( $t = -2.39, p < .05$ ). Age and sex were statistically controlled in all multivariate analyses.

[94]

[95]

### Do Minor Events Affect Symptoms?

To examine the relative influence of different kinds of prior minor events on current health, a series of hierarchical multiple regression analyses were conducted, with each symptom measure at Time 2 as the dependent variable. Age, sex and the relevant prior symptom measure were entered on the first step, with prior general hassles and uplifts, and prior interpersonal hassles and uplifts, entered on the second step. R<sup>2</sup>-change values and beta weights from these analyses are presented in Table 3. With prior health partialled out, prior minor events did impact on current health, accounting for an additional 11% of variance in total symptoms and 9% in URI symptoms, and an additional 3% of variance in non-URI symptoms. The beta weights reveal that uplifts had more of an impact on total symptoms than hassles, although both hassles and uplifts had an impact on URI symptoms. Interestingly, the effect of interpersonal uplifts on symptoms was opposite to the effect of the other kinds of events, such that an increase in interpersonal uplifts was associated with a decrease in symptoms.

**Table 3: R<sup>2</sup>-Change Values and Beta Weights for Current Health Predicted By Prior Minor Events (Controlling for Age, Sex and Prior Health)**

Current Health Measure	N	R <sup>2</sup> -Change	Beta Weights			
		Prior Minor Events	General Hassles	General Uplifts	Interpersonal Hassles	Interpersonal Uplifts
Total Symptoms	136	.111***	.143	.241**	.129	-.164*
URI Symptoms	136	.087***	.165*	.219**	.067	-.175*
Non-URI Symptoms	140	.034*	.140	.065	.043	-.011

\*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$

### Do Interpersonal Events Interact with Optimism or Pessimism to Affect Symptoms?

Hierarchical multiple regression was also used to examine whether interpersonal events interacted with optimism or pessimism to affect total, URI and non-URI symptoms. The deviation score product terms of interpersonal hassles and optimism, as well as interpersonal uplifts and optimism, were entered after their main effects (Finney, Mitchell, Cronkite & Moos, 1984). Contrary to expectations, optimism did not interact with events to affect any symptom measure. The R<sup>2</sup>-change values of these interaction terms ranged from .007 to .016, all non significant. A similar set of analyses were carried out for pessimism, and this variable did not

interact with interpersonal events to affect URI or non-URI symptoms, although the joint effects of pessimism and interpersonal events did affect total symptoms, as shown in Table 4. Sub-group analyses revealed that interpersonal hassles are more strongly related to symptoms among people low in pessimism.

[95]

[96]

**Table 4: R2-Change Values and Beta Weights for Current Health Predicted By Interactions between Pessimism and Prior Interpersonal Hassles and Uplifts (Controlling for Age, Sex and Prior Health)**

Current Health Measures	N	R2-Change	Beta Weights	
		Prior Interpersonal Events X Pessimism	Interpersonal Hassles X Pessimism	Interpersonal Uplifts X Pessimism
Total Symptoms	144	.025*	-.163**	.034
URI Symptoms	145	.006	-.079	.025
Non-URI Symptoms	148	.016	-.093	.103

\*  $p < .05$  \*\*  $p < .01$

### **Do Typical URI Behaviors Moderate the Relationship Between Minor Events and URI Symptoms?**

To examine whether prior events interacted with typical URI health behaviors to affect reported URI symptoms, further hierarchical multiple regression analyses were conducted. Age, sex and prior health were entered on step one, hassles, uplifts and health behaviors were entered on step two, and the deviation score product terms of prior hassles and URI behaviors, as well as uplifts and behaviors, were entered on step three. Typical URI health behaviors did not interact with hassles or uplifts to affect symptoms (R2-change values ranged from .000 to .01, all n.s.).

## **DISCUSSION**

This study supports previous findings that minor daily events are related to self-reported physical symptoms, with events accounting for 9% of the variance in reported URI symptoms, and 3% of the variance in non-URI symptoms, one week later. However, the nature of this relationship was dependent upon the specific type of minor event examined. Desirable and undesirable general events were positively related to URI symptoms, such that participants who experienced more of these events reported more symptoms seven days later. These findings are consistent with previous research (e.g. Lyons & Chamberlain, 1994). However, different findings were obtained when interpersonal events were examined. Here, desirable interpersonal events had the opposite effect, in that they were negatively related to reported URI symptoms. Participants who



experienced more desirable interpersonal events reported fewer symptoms one week later. Undesirable interpersonal events were not related to symptoms.

[96]

[97]

This suggests that any differential effects of hassles and uplifts on reported URI symptoms between individuals may not be apparent until the interpersonal nature of the events are considered. Further, this may have been found only recently because of the way minor events have been assessed. Previous studies have tended to ask participants to classify an event as either a hassle or an uplift (e.g. Evans et al. 1988; Evans & Edgerton, 1991; Lyons & Chamberlain, 1994), whereas in the present study an event could be classified as both a hassle and an uplift. Events can be both desirable and undesirable, especially those that are interpersonal in nature (for example, family members could be a source of both hassles and uplifts).

It is unclear why interpersonal uplifts related negatively, and general uplifts and hassles related positively, to self-reported URI symptoms. Taylor's (1991) mobilization-minimization hypothesis states that negative events are unexpected and draw off disproportionate resources compared to positive events. Negative events are said to elicit larger social, cognitive, affective, and behavioral as well as physiological responses than positive events. However this does not explain the positive relationship between general uplifts and symptoms. Lyons and Chamberlain (1994) have suggested that hassles may affect susceptibility to illness, while general uplifts affect the responses made to illness. If this is the case, experiencing a number of general uplifts may reduce the time available to engage in behavioral responses to physical symptoms.

Interpersonal uplifts, on the other hand, may provide a positive framework for the individual, a sense of control and efficacy, both generally and over one's health. Thus, behavioral responses may be undertaken (and possibly encouraged by social network members) to prevent or respond to initial symptoms. Both interpersonal uplifts and general uplifts were weakly related to typical URI health behaviors in this sample, while hassles had no relationship with health behaviors. Alternatively, experiencing a relatively high number of interpersonal uplifts may affect an individual's coping resources, such that s/he feels more able to cope with daily hassles because of the positive experiences within the social network. Also, interpersonal uplifts may affect symptom reporting, such that fewer symptoms are actually recalled or reported by people who have experienced more positive interpersonal events.

Interpersonal uplifts may also affect symptoms via an influence on emotion and mood. Studies have shown that negative emotions predict severity and susceptibility of illness (e.g. Cohen et al., 1995), while positive affect has been positively related, and negative mood negatively related, to secretory immunoglobulin A (which is believed to provide defense against common cold viruses) (Stone et al., 1994). However, if interpersonal uplifts did affect symptoms through changes in mood, the present results would suggest that interpersonal and general uplifts have opposite effects on emotional states and mood.

[97]

[98]

We may gain further understanding of the relationship between minor events and health by examining moderating influences. However, the predicted moderating relationship of optimism and interpersonal events on reported symptoms did not occur in the present study, although pessimism interacted with interpersonal hassles to affect total symptoms. Interpersonal hassles were more strongly related to total symptoms among people who were less pessimistic than others. This finding is consistent with results obtained by Lyons and Chamberlain (1994), who found that interpersonal hassles were more strongly related to symptoms for optimists than for pessimists, although this only held for URI symptoms. People who are more pessimistic may be more accurate in symptom reporting, or may expect to experience a number of minor daily events, and therefore cope better with them, than people who are not so pessimistic.

The present study also examined the nature of the optimism construct, and the results provide further support for the notion that the LOT is not unidimensional, but taps differing constructs of optimism and pessimism. Previous research into pessimistic explanatory style has demonstrated that people who explain bad events with stable, global and internal causes report more illnesses (Lin & Peterson, 1990) and have poorer health 20 to 35 years later than optimistic individuals (Peterson, Seligman & Vaillant, 1988). The present results suggest that it is an individual's tendency to be pessimistic that is influential in affecting symptom reporting, rather than their tendency to be less optimistic. Together, these findings demonstrate the need to look at both optimism and pessimism in relation to health.

It was also predicted that engaging in behavioral action when experiencing a cold, such as resting more than usual or taking medication, may buffer the impact of minor events on symptoms. This was not supported in the present study. The measurement of URI behaviors may have influenced these results. Participants were asked to provide information regarding their typical URI behaviors, rather than actual behaviors engaged in at the time of data collection, and this may have obscured any potential effects. As social learning theorists point out, present situational factors play a large role in determining individual behavior (Lippa, 1994).

The present study employed a student sample, limiting generalizability of the findings. The specific types of minor events that undergraduates experience (and interpret as desirable and undesirable) are different from other groups (Chamberlain & Zika, 1990). However, on the whole undergraduates are a healthy population, and the fact that the proposed relationship between minor events and symptom experience was apparent in this sample demonstrates the robustness of the findings. It would be interesting and beneficial to carry out similar studies in less healthy samples, as stress may have its greatest effect among people whose immune systems are already compromised, such as the elderly and people who are in poor health (Cohen & Williamson, 1991).

[98]

[99]

The results of this study, considered in conjunction with previous findings, suggest that hassles and uplifts are separate constructs and need to be treated as such in future research. They also demonstrate the need to examine interpersonal events separately and to explore the various behavioral and physiological pathways through which different kinds of minor daily events may affect illness and symptom reporting.

## REFERENCES

Chamberlain, K. & Zika, S. (1990). "The minor events approach to stress: Support for the use of daily hassles." *British Journal of Psychology*, 81:469-481.

Chang, E. C., D'Zurilla, T. J. & Maydeu-Olivares, A. (1994). "Assessing the dimensionality of optimism and pessimism using a multimeasure approach." *Cognitive Therapy and Research*, 18:143-160.

Cobb, J.M.T. & Steptoe, A. (1996). "Psychosocial stress and susceptibility to upper respiratory-tract illness in an adult-population sample." *Psychosomatic Medicine*, 58:404-412.

Cohen, S., Doyle, W.J., Skoner, D.P., Fireman, P., Gwaltney, J.M. & Newsom, J.T. (1995). "State and trait negative affect as predictors of objective and subjective symptoms of respiratory viral infections." *Journal of Personality and Social Psychology*, 68:159-169.

Cohen, S., Doyle, W.J., Skoner, D.P., Rabin, B.S. & Gwaltney, J.M. (1997). "Social ties and susceptibility to the common cold." *Journal of the American Medical Association*, 277:1940-1944.

Cohen, S. & Williamson, G.M. (1991). "Stress and infectious disease in humans." *Psychological Bulletin*, 109:5-24.

DeLongis, A., Folkman, S. & Lazarus, R. (1988). "The impact of daily stress on health and mood: Psychological and social resources as mediators." *Journal of Personality and Social Psychology*, 54:486-495.

Dember, W. N., Martin, S. H., Hummer, M. K., Howe, S. R. & Melton, R. S. (1989). "The measurement of optimism and pessimism." *Current Psychology: Research and Reviews*, 8:102-119.

[99]

[100]

Evans, P. D. & Edgerton, N. (1991). "Life-events and mood as predictors of the common cold." *British Journal of Medical Psychology*, 64:35-44.

Evans, P. D., Pitts, M. K. & Smith, K. (1988). "Minor infection, minor life-events and the four day desirability dip." *Journal of Psychosomatic Research*, 32:533-539.

Finney, J. W., Mitchell, R. E., Cronkite, R. C. & Moos, R. H. (1984). "Methodological issues in estimating main and interaction effects: Examples from coping/social support and stress field." *Journal of Health and Social Behavior*, 25:85-98.

Lazarus, R. S. (1984). "Puzzles in the study of daily hassles." *Journal of Behavioral Medicine*, 7:375-389.

Lin, E. H. & Peterson, C. (1990). "Pessimistic explanatory style and response to illness." *Behavioural Research and Therapy*, 28:243-248.

Lippa, R.A. (1994). *Introduction to social psychology (2nd ed.)*. California: Brooks-Cole.

Lyons, A. & Chamberlain, K. (1994). "The effects of minor events, optimism and self-esteem on health." *British Journal of Clinical Psychology*, 33:559-570.

Marshall, G. N., Wortman, C. B., Kusulas, J. W., Hervig, L. K. & Vickers, Jr., R. R. (1992). "Distinguishing optimism from pessimism: Relations to fundamental dimensions of mood and personality." *Journal of Personality and Social Psychology*, 62:1,067-1,074.

Mroczek, D. K., Spiro III, A., Aldwin, C. M., Ozer, D. J. & Boss,, R. (1993). "Construct validation of optimism and pessimism in older men: Findings from the normative aging study." *Health Psychology*, 12:406-409.

Pennebaker, J. (1982). *The Psychology of Physical Symptoms*. New York: Springer-Verlag.

Peterson, C., Seligman, M. E. P. & Vaillant, G. E. (1988). "Pessimistic explanatory style is a risk factor for physical illness: A 35 year longitudinal study." *Journal of Personality and Social Psychology*, 55:23-27.

[100]

[101]

Scheier, M. F. & Carver, C. S. (1985). "Optimism, coping and health. Assessment and implications of generalized outcome expectancies." *Health Psychology*, 4:219-247.

Scheier, M. F. & Carver, C. S. (1987). "Dispositional optimism and physical well-being: The influence of generalized expectancies on health." *Journal of Personality*, 55:169-209.

Schulz, R. & Rau, M.T. (1985). "Social support through the life cycle." In S. Cohen & S.L. Syme (Eds.), *Social support and health* (pp.129-149). Orlando: Academic Press.

Sheffield, D., McVey, C. & Carroll, D. (1997). "Daily events and somatic symptoms: Evidence of a lagged relationship." *British Journal of Medical Psychology*, 69:267-269.

Smith, A.P., Tyrrell, D.A.J., Coyle, K. & Willman, J.S. (1987). "Selective effects of minor illness on human performance." *British Journal of Psychology*, 78:183-188.

Stone, A.A., Neale, J.M., Cox, D.S., Napoli, A., Valdimarsdottir, H. & Kennedy-Moore, E. (1994). "Daily events are associated with a secretory immune response to an oral antigen in men." *Health Psychology*, 13:440-446.

Stone, A. A., Reed, B.R. & Neale, J. M. (1987). "Changes in daily event frequency precede episodes of physical symptoms." *Journal of Human Stress*, 13:70-74.

Stone, A. A., Porter, L. S. & Neale, J. M. (1993). "Daily events and mood prior to the onset of respiratory illness episodes: A non-replication of the 3-5 day 'desirability dip'." *British Journal of Medical Psychology*, 66:383-393.

Taylor, S. E. (1991). "Asymmetrical effects of positive and negative events: The mobilization-minimization hypothesis." *Psychological Bulletin*, 110:67-85.

[101]

[102]

## **AUTHOR INFORMATION**

Antonia Lyons is a lecturer in the School of Psychology at the University of Birmingham, U.K. Her main research interests are in health psychology, particularly the social construction of the self during language episodes and possible physiological correlates of this process; the effects of minor daily events on physical health; women's understandings and experiences of menopause and hormone replacement therapy; and the use of qualitative methods in health psychology. E-mail: address: [a.c.lyons@bham.ac.uk](mailto:a.c.lyons@bham.ac.uk)

Kerry Chamberlain is a Senior Lecturer in Psychology at Massey University, Palmerston North, New Zealand. Kerry is actively involved in research relating to health issues, and utilises both quantitative and qualitative methods in his research. Recent publications include work on socio-economic status differentials in health, the application of qualitative research methods in health psychology, the health understandings of smokers, and psychological factors in diabetes. He is coeditor (with Michael Murray) of the forthcoming book *Qualitative Health Psychology: Theories and Methods* (Sage) and serves on the Editorial Board of the *Journal of Health Psychology*. E-mail address: [K.Chamberlain@massey.ac.nz](mailto:K.Chamberlain@massey.ac.nz)

Correspondence concerning this article should be addressed to Dr. A. C. Lyons, School of Psychology, University of Birmingham, Edgbaston B15 2TT, United Kingdom; telephone 0121-4144902; E-mail: [a.c.lyons@bham.ac.uk](mailto:a.c.lyons@bham.ac.uk).

[102]