CHAPTER 2

DOES HAPPINESS BUFFER STRESS?

Jacqueline van der Werff and Robbert Sanderman

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Summary
When faced with the same stressful life-events, do happy people suffer less damage to their health in the long run than unhappy people, as measured by the increase of health complaints?

This hypothesis is tested on the data of a four wave panel study in the Netherlands. The analysis involves three main variables: 1. happiness, measured by Bradburn's affect balance scale; 2. stressful life-events, measured by open questions on events in the past year and weighted for importance by an external jury; 3. health, measured by everyday psychosomatic complaints. The results show that happiness hardly specifies the stress-health relationship.

1. INTRODUCTION

It is generally believed that happy people take life more easily and that chronically unhappy people are more vulnerable to life's problems. This is an axiom in psychosomatic medicine.

The notion can be formulated in terms of the stress-theory. The stress-theory holds that an overload of problems damages physical and mental health in the long run; by biological processes (e.g. heightening blood pressure) and psychological ones (e.g. learned helplessness). The effect of stress on health is believed to depend on person and situation, the so-called `moderator variables'. Social variables shown to moderate the stress-health relationship are e.g. `social prestige' and `having a partner'. Psychological moderator variables are e.g. a `Type-A' behavior pattern, `hardiness' and `optimism'. `Happiness' could be another moderator variable.

How could happiness moderate the effect of stress on health? One way is by the greater optimism of the happy. A similar burden may be less stressful for an optimist than for a pessimist and hence less damaging to health. Likewise the greater sense of control fostered by happiness may reduce the stress of negative life events. Another way could be by way of health. Happiness tends to foster health (Veenhoven, 1988), among other things through better health

behaviour and healthier people are more resilient. Even if happiness does not really protect health, it can at least reduce health complaints. Happy people may be less apt to somatize. See **Scheme 1**

Though it is widely believed that happiness buffers stress, the effect has not been demonstrated convincingly as yet. Therefore this chapter tests the hypothesis that, when faced with stressful life-events, happy people suffer less damage to their health than unhappy people.

2. METHOD

2.1 Subjects

Subjects participated in an investigation on medical consumption in the Netherlands. Some characteristics of the sample are presented in **scheme 2.**
A group of 296 people, 157 men and 139 women, serve as participants in the study. The years of their birth vary from 1907 to 1954. Three participants have no education, 79 have primary school, 74 technical education, 59 day-time compulsory education, 39 secondary modern school, 18 teacher training and 20 have been through college. The average monthly income the participants received in 1975-1976 is about Dfl. 1 800.-.

2.2 Data gathering

The subjects were interviewed four times: in 1975, 1976, 1984 and 1986. They were interviewed at home, on the basis of a structured questionnaire containing open and closed questions.

2.3 Variables

The analysis involves three main variables:

Happiness.
Veenhoven (1984) defines happiness as the overall appreciation of life-as-a-whole. Within this concept he distinguishes two dimensions: `hedonic level of affect' and `contentment'.
Hedonic level is the degree to which positive affects characteristacally dominate over negative affects. Contentment is the degree to which aspirations are perceived to be met.

In this chapter we will focus on hedonic level, both for pragmatic reasons (no data on overall happiness) and because this variant is less sensitive to desirability bias. Happiness (hedonic level) is measured by an adjusted version of the Affect Balance Scale. This scale consists of eight questions about affects experienced in the past few weeks. There are four positive items, which together form the Positive Affect subscale (PA-scale) and four negative items, which together form the Negative Affect subscale (NA-scale). Typical items are: `Did you feel, in the past few weeks, that things were going like you wished they would?', `Did you feel, in the past few weeks, pleased because someone gave you a compliment for something you had done?', or: `Did you feel unpleasant in the past few weeks?', `Did you, in the past few weeks, feel confused because someone said something unpleasant to you?'. These subscales range from 1 (= not at all) to 4 (= very often), with a total score ranging from 4 (= many negative, few positive feelings) to 16 (= few negative, many positive feelings).

The overall score on the scale is established by subtracting NA from PA. Thus an Affect Balance Score (ABS) results, which indicates the degree to which positive affects outweigh negative affects. This score ranges from -12 to +12. ABS scores were assessed at all four interviews.

The original version of the Affect Balance Scale consists of ten items. In the investigation reported here, two questions were dropped, because they did not fit in the Dutch concept.

Health

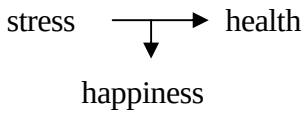
Health was measured by everyday psychosomatic complaints, namely: 1. headaches; 2. nervousness; 3. difficulties with digestion; 4. palpitation; 5. oppressed feeling or pain in the chest; 6. diarrhoea or constipation; 7. dejection; 8. confusion; 9. pain in the back; 10. being tired or listless; 11. being moody or touchy; 12. insomnia; 13. dizziness.
This complaint score was assessed at all four interviews.

Stress

In 1976 and 1986 the subjects were questioned about life-events and life-circumstances in the year previous to the interview. Both positive and negative things were noted. Importance was estimated by a panel of four judges. This panel ascertained the amount of unpleasantness per participant and per situation. At first, they made their judgement individually and independent from each other, on a seven points scale. In case they disagreed with each other, a short discussion followed about the pros and cons of a certain score. The extent to which the judgments of the jury corresponded to each other, is expressed by Cronbach's alpha. As far as the judgments of the unpleasantness of the situations is concerned, alpha is .92. Therefore the reliability of the judgments is very high.

Analysis

The following causal scheme will be tested:



We will consider whether happiness specifies the stress-health relationship. That is, the effects of stress are supposed to decrease or increase as a consequence of the influence of happiness.

We will consider three time-lags, namely two two-year lags and one 10-year lag:

1. 1975 happiness → 1976 stress & health
2. 1984 happiness → 1986 stress & health.
3. 1975-76 happiness → 1984 stress → 1986 health.

3. RESULTS

3.1 Intercorrelations

First, we will take a look at the relationship between the variables involved. In **scheme 3,** correlations between the variables are presented. The correlations show to what amount health (symptom level) is predicted by the mediating variables.

Health reported in 1975 (health 1975, **scheme 3a**) is highly correlated with health reported in 1976. A high symptom level in 1975 indicates a high symptom level in 1976. All mediating variables correlate with health in 1975 and 1976.

In 1984-1986, the initial health is also highly correlated with health in 1986 (**scheme 3b)**. All mediating variables are significantly correlated with health in 1984 and 1986.

The symptoms reported in 1984 (health 1984, **scheme 3c**) correlate highly with those reported in 1986. All mediating variables are correlated significantly with health in 1984 and 1986 (**scheme 3c**).

Almost all variables are correlated with the initial health. When these variables are intercorrelated, it is hard to ascertain the amount of influence each variable has independently. The following regression analysis will therefore control for the initial health.

3.2 Effects of stress and happiness on health

As a next step we performed a regression analysis. The results are reported in the **schemes 4, 5, 6** and **7.**

Scheme 4a shows that happiness and stress have a significant influence on the variance in symptom level (health) reported in 1976, when not checked for initial health.

However, when checked for initial health, happiness, stress or happiness x stress add no significant proportion of variance of what was already explained by the initial health. The total amount of variance explained is 48% (**scheme 4b**).

Over the 1984-1986 period, happiness and stress separately have a significant effect on health in 1986 (**scheme 5a**), when not checked for initial health. After checking for initial health, happiness, stress or happiness x stress add no significant proportion of variance of what was already explained by initial health **(scheme 5b**).

Scheme 6a shows that happiness and stress separately have a significant effect on health in 1986, when not checked for initial health. When checked for initial health, happiness, stress or happiness x stress add no significant proportion of variance. A small proportion of variance is added by stress (2%). The total amount of explained variance is 38%.

Finally, **scheme 7a** shows a significant effect of happiness and stress, separately, and neuroticism. When controlled for initial health, stress and neuroticism add a significant proportion of variance. The total explained variance is 49% **(scheme 7b**).

4. DISCUSSION

Clearly, the hypothesis receives little support. There is no buffer effect. Why is that? Is the hypothesis false, or is something wrong with our data? Let us consider the latter possibility first.

Limitations of the data

One could argue that the Affect Balance Scale does not measure the overall appreciation of life-as-a-whole and that therefore a long lasting effect may not be expected. The ABS-questions only concern positive and negative feelings experienced in the last few weeks, whereas the appreciation of life-as-a-whole covers a broader field of experience. Also two questions, concerning feelings in the past few years, were dropped. The remaining questions concern feelings (in a certain situation) experienced in the past few weeks.

It is also possible that happy people first tend to ignore their complaints, but later take them seriously, so that optimism only has a short-lived effect. For these reasons, the time interval of one or two years may be too long.

Limitations of the theory

The other possibility is of course, that happiness does not buffer stress. There are two possible reasons. One is that the effects referred to in the introduction do not exist. Another possibility is that the buffering effects do exist, but that they are counter-balanced by reversed effects. One such effect could be that happy people do not expect bad events to happen to them and that the happening of such an event causes greater disappointment and hits them even harder. Their vision of life may disturbed and they may become even more upset.

Another possibility is that the tendency of the happy to see the sunny side of things deceives them in the perception of their health. They may be more apt to ignore signs of health defects and therefore risk more serious damage than unhappy hypochondriacs.

5. CONCLUSION

Happiness as measured by the Affect Balance Scale does not affect the stress-health relationship. Happiness is not a buffer to stress.

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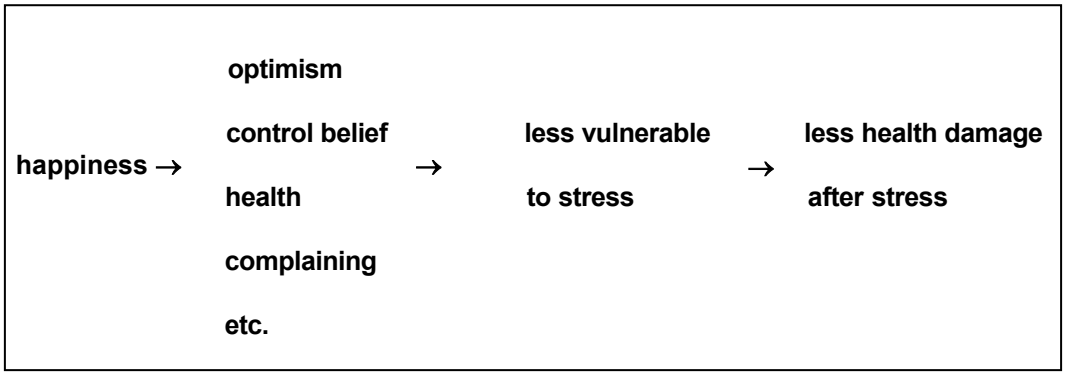
Scheme 1


optimism
control belief
happiness →
health
complaining
etc.
→
less vulnerable
to stress
→
less health damage
after stress

Scheme 2. Characteristics of the sample

Gender	
men	53.0%
women	47.0%
education level	
no education, primary school	28.1%
vocational training	45.5%
university, academy	26.4%
monthly income	
< Dfl. 1,600.00	68.6%
> Dfl. 1,600.00	31.4%
year of birth	
1907-1925	26.0%
1926-1940	30.0%
1941-1954	44.0%

Scheme 3a. Correlations 1975-1976

	health 1975	happiness 1975	stress 1975	health 1976
health 1975				
happiness 1975	-.35*			
stress 1975	.49*	.11		
health 1976	.67*	-.27*	.47*	

Scheme 3b. Correlations 1984-1986

	health 1984	happiness 1984	stress 1984	health 1986
health 1984				
happiness 1984	-.54*			
stress 1984	.21*	-.15		
health 1986	.57*	-.34*	.27*	

Scheme 3c. Correlations 1975/76, 1984-1986

health 1984	health 1984	happiness 1975/76	stress 1984	health 1986
happiness 1975/76	-.32*			
stress 1984	.20*	.20		
health 1986	.60*	-.60*	.26*	

* < .005
** < .05

Scheme 4a. Prediction health 1976 (without control for initial health)

	ß	R	R^2	R^2 change
happiness 1975	-.37	.37	.14	.14*
stress 1975	.40	.51	.26	.12*
happiness x stress	.04	.51	.26	.00

Scheme 4b. Prediction health 1976 (with control for initial health)

	ß	R	R^2	R^2 change
health 1975	.67	.67	.45	.45*
happiness 1975	.01	.67	.45	.00
stress 1975	.20	.69	.48	.03
happiness x stress	.00	.69	.48	.00

* < .005
** < .05

Scheme 5a. Prediction health 1986 (without control for initial health)

	ß	R	R^2	R^2 change
happiness 1984	-.34	.34	.12	.12*
stress 1984	.23	.41	.17	.05*
happiness x stress	.00	.41	.17	.00

Scheme 5b. Prediction health 1986 (with control for initial health)

	ß	R	R^2	R^2 change
health 1984	.57	.57	.33	.33*
happiness 1984	-.05	.57	.33	.00
stress 1984	.16	.59	.35	.02
happiness x stress	.05	.59	.35	.00

* < .005
** < .05

Scheme 6a. Prediction health 1986 (without control for initial health)

	ß	R	R^2	R^2 change
happiness 1975/76	-.36	.36	.13	.13*
stress 1984	.23	.43	.18	.05*
happiness x stress	-.04	.43	.18	.00

Scheme 6b. Prediction health 1986 (with control for initial health)

	ß	R	R^2	R^2 change
health 1976	.59	.59	.35	.35*
happiness 1975/76	-.14	.60	.36	.01
stress 1984	.15	.62	.38	.02**
happiness x stress	.02	.62	.38	.00

* < .005
** < .05

Scheme 7a. Prediction health 1976 (without control for initial health)

	ß	R	R^2	R^2 change
happiness 1975	-.39	.39	.15	.15*
stress 1975	.29	.47	.22	.07*
happiness x stress	.00	.47	.22	.00
neuroticism 1975	.61	.66	.43	.21*
relationship 1975	.00	.66	.43	.00
self esteem 1975	-.05	.66	.43	.00

Scheme 7b. Prediction health 1976 (with control for initial health)

	ß	R	R^2	R^2 change
health 1975	.64	.64	.41	.41*
happiness 1975	-.01	.64	.41	.00
stress 1975	.17	.66	.44	.02**
happiness x stress	.00	.66	.44	.00
neuroticism 1975	.37	.70	.48	.05*
relationship 1975	-.01	.70	.48	.00
self esteem 1975	-.04	.70	.49	.00

* < .005
** < .05