

SOCIAL PSYCHOLOGY AND HEALTH

SECOND EDITION

Wolfgang Stroebe

OPEN UNIVERSITY PRESS
Buckingham · Philadelphia

To the members of ISAG
(Interdisziplinäre Sozialwissenschaftliche Arbeitsgemeinschaft)
In celebration of our twenty-fifth anniversary

Open University Press
Celtic Court
22 Ballmoor
Buckingham
MK18 1XW

email: enquiries@openup.co.uk
world wide web: www.openup.co.uk

and
325 Chestnut Street
Philadelphia, PA 19106, USA

First edition published 1995
Reprinted 1996, 1997

First published in this second edition 2000

Copyright © Wolfgang Stroebe 2000

All rights reserved. Except for the quotation of short passages for the purpose of criticism and review, no part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of the publisher or a licence from the Copyright Licensing Agency Limited. Details of such licences (for reprographic reproduction) may be obtained from the Copyright Licensing Agency Ltd of 90 Tottenham Court Road, London, W1P 0LP.

A catalogue record of this book is available from the British Library

ISBN 0 335 19921 6 (pb) 0 335 19922 4 (hb)

Library of Congress Cataloging-in-Publication Data

Stroebe, Wolfgang.

Social psychology and health / Wolfgang Stroebe. — 2nd ed.

p. cm. — (Mapping social psychology series)

Includes bibliographical references and index.

ISBN 0-335-19922-4 (hb) — ISBN 0-335-19921-6 (pb)

1. Clinical health psychology. 2. Social psychology. I. Title. II. Series.

R726.7.S78 2000

155.9—dc21

99-059166

Typeset by Graphicraft Limited, Hong Kong
Printed in Great Britain by Biddles Limited, Guildford and Kings Lynn

CONTENTS

| | | |
|--------------|--------------------------------------------------------------------------|-----------|
| | <i>Preface</i> | ix |
| ONE | Changing conceptions of health and illness | 1 |
| | The modern increase in life expectancy | 1 |
| | From disease control to health promotion | 4 |
| | The impact of behaviour on health | 5 |
| | The impact of stress on health | 7 |
| | From the biomedical to the biopsychosocial model of disease | 8 |
| | Social psychology and health | 9 |
| | Plan of the book | 9 |
| TWO | Determinants of health behaviour: a social psychological analysis | 12 |
| | Health behaviour | 12 |
| | <i>The concept</i> | 12 |
| | <i>The structure of health behaviour</i> | 13 |
| | Attitudes, beliefs and behaviour | 14 |
| | <i>The concept of attitude</i> | 14 |
| | <i>The relationship between attitude and beliefs</i> | 14 |
| | <i>The relationship between attitude and behaviour</i> | 15 |
| | Models of behaviour | 18 |
| | <i>The health belief model</i> | 18 |
| | <i>Protection motivation theory</i> | 23 |
| | <i>The theory of reasoned action</i> | 27 |
| | <i>The theory of planned behaviour</i> | 31 |
| | <i>Beyond reasons and plans: the role of habits in planned behaviour</i> | 36 |
| | Summary and conclusions | 40 |
| THREE | Beyond persuasion: the modification of health behaviour | 43 |
| | The nature of change | 43 |
| | <i>Precaution adoption process model</i> | 44 |

| | | |
|-------------|----------------------------------------------------------------------|-----------|
| | <i>The transtheoretical model of behaviour change</i> | 46 |
| | <i>Implications of stage model for interventions</i> | 50 |
| | <i>Conclusions</i> | 52 |
| | The public health model | 52 |
| | <i>Persuasion</i> | 53 |
| | <i>Limits to persuasion</i> | 65 |
| | <i>Beyond persuasion: changing the incentive structure</i> | 68 |
| | <i>Summary and conclusions</i> | 69 |
| | Settings for health promotion | 70 |
| | <i>The physician's office</i> | 70 |
| | <i>Schools</i> | 71 |
| | <i>Worksite</i> | 71 |
| | <i>Community</i> | 72 |
| | <i>Summary and conclusions</i> | 74 |
| | The therapy model: changing and maintaining change | 74 |
| | <i>Cognitive-behavioural treatment procedures</i> | 75 |
| | <i>Relapse and relapse prevention</i> | 77 |
| | Summary and conclusions | 81 |
| FOUR | Behaviour and health: excessive appetites | 84 |
| | Smoking | 84 |
| | <i>The health consequences of smoking</i> | 84 |
| | <i>Determinants of smoking</i> | 88 |
| | <i>Stopping smoking</i> | 92 |
| | <i>Helping smokers to stop</i> | 94 |
| | <i>Primary prevention</i> | 103 |
| | <i>Conclusions</i> | 105 |
| | Alcohol and alcohol abuse | 106 |
| | <i>Alcohol and health</i> | 106 |
| | <i>Behavioural and cognitive consequences of alcohol consumption</i> | 111 |
| | <i>Hazardous consumption levels and alcoholism</i> | 112 |
| | <i>Theories of alcohol abuse</i> | 114 |
| | <i>Clinical treatment of alcohol problems</i> | 119 |
| | <i>Community-based interventions for alcohol problems</i> | 124 |
| | <i>Primary prevention</i> | 126 |
| | <i>Summary and conclusions</i> | 129 |
| | Eating control, overweight and obesity | 129 |
| | <i>Overweight, obesity and body weight standards</i> | 129 |
| | <i>Obesity and health</i> | 130 |
| | <i>The social consequences of obesity</i> | 132 |
| | <i>Genetics and weight</i> | 133 |
| | <i>The physiological regulation of eating behaviour</i> | 134 |
| | <i>The cognitive regulation of eating behaviour</i> | 135 |
| | <i>Clinical treatment of obesity</i> | 144 |
| | <i>Self-help and self-help groups</i> | 151 |
| | <i>Trying to lose weight without help</i> | 152 |
| | <i>Can dieting be harmful?</i> | 152 |
| | <i>Conclusions</i> | 154 |
| | <i>Obesity and eating disorders</i> | 155 |
| | General conclusions | 158 |

| | | |
|--------------|--------------------------------------------------------------------------------------|-----|
| FIVE | Behaviour and health: self-protection | 160 |
| | Healthy diet | 160 |
| | <i>Cholesterol and coronary heart disease</i> | 160 |
| | <i>Salt intake and hypertension</i> | 167 |
| | Exercise | 168 |
| | <i>Exercise and physical health</i> | 168 |
| | <i>Exercise and psychological health</i> | 174 |
| | <i>Exercise and healthy aging</i> | 178 |
| | <i>The determinants of regular exercise</i> | 179 |
| | <i>Research on interventions to promote physical activity</i> | 182 |
| | The primary prevention of AIDS | 184 |
| | <i>The cause of AIDS</i> | 184 |
| | <i>Modes of transmission</i> | 185 |
| | <i>The epidemiology</i> | 186 |
| | <i>Methods of safe(r) sex</i> | 187 |
| | <i>Psychosocial determinants of sexual risk behaviour</i> | 189 |
| | <i>Interventions to reduce risk behaviour: from risk education to skill training</i> | 193 |
| | <i>Pharmacological treatment of HIV and AIDS</i> | 199 |
| | <i>Summary and conclusions</i> | 200 |
| | Injury prevention and control | 200 |
| | <i>The epidemiology</i> | 201 |
| | <i>The control of injury</i> | 201 |
| | <i>Conclusions</i> | 204 |
| | General conclusions | 204 |
| SIX | Stress and health | 207 |
| | Physiological stress and the breakdown of adaptation | 207 |
| | Psychosocial stress and health | 209 |
| | <i>The health impact of cumulative life stress</i> | 209 |
| | <i>The health impact of specific life events: the case of partner loss</i> | 215 |
| | What makes critical life events stressful? | 218 |
| | <i>Stress as a person–environment interaction</i> | 218 |
| | <i>Stress as learned helplessness</i> | 221 |
| | <i>Conclusions</i> | 224 |
| | How does psychosocial stress affect health? | 224 |
| | <i>Physiological responses to stress</i> | 225 |
| | <i>Behavioural responses to stress</i> | 226 |
| | <i>Stress and disease</i> | 227 |
| | Summary and conclusions | 234 |
| SEVEN | Moderators of the stress–health relationship | 236 |
| | Strategies of coping | 236 |
| | <i>Dimensions of coping</i> | 237 |
| | <i>The differential effectiveness of strategies of coping</i> | 239 |
| | Coping resources as moderators of the stress–health relationship | 243 |
| | Extrapersonal coping resources | 243 |
| | <i>Material resources</i> | 244 |
| | <i>Social support</i> | 244 |
| | Intrapersonal coping resources | 254 |

| | | |
|--------------|------------------------------------------------------------------------------|-----|
| | <i>The hardy personality</i> | 255 |
| | <i>Dispositional optimism</i> | 258 |
| | Other moderators of the stress–health relationship: the case of hostility | 261 |
| | Summary and conclusions | 264 |
| EIGHT | The role of social psychology in health promotion | 267 |
| | Limits to persuasion | 267 |
| | Some side effects of health education | 269 |
| | Beyond persuasion: changing the incentive structure | 270 |
| | Freedom and constraint | 271 |
| | Summary and implications | 272 |
| | <i>Glossary</i> | 274 |
| | <i>References</i> | 284 |
| | <i>Author index</i> | 329 |
| | <i>Subject index</i> | 336 |

PREFACE

This second edition of *Social Psychology and Health* has been so extensively revised that it essentially represents a new book. The parts which remained from the old text have been updated, a great deal of new text has been added, and more than a third of the original references have been replaced. The book has also grown in size, and the coverage of many of the areas has become more comprehensive. All this has been achieved within the old structure. Thus, hardly any of the chapter and section headings have been changed, and the number of chapters has remained the same.

There are at least three reasons for this extensive revision. First, health psychology is a very active research area. In the five years since the writing of the first edition, a substantial body of research has been published, much of which has had bearings on the topics covered in this book. Second, the book uses a great deal of epidemiological literature and this type of descriptive evidence does not age well. Third, and perhaps most importantly, my own perspective on health psychology has changed during the last few years. Since my move to the Netherlands, my research interests in health psychology have broadened from bereavement to obesity and sexual risk behaviour. This change in interest is reflected in some of the chapters of this book. What has not changed, however, is the basic scientific perspective which shaped this book. Although health psychology is an interdisciplinary endeavour, involving various areas ranging from medicine to sociology and economics, and although these perspectives are well represented, the main focus of this book is on social psychology and health. Therefore much of the health research presented here has been guided by social psychological theories and conducted by social psychologists.

It is important to recognize, however, that the relationship between social and health psychology has not been a one-way street. Health behaviour is notoriously difficult to change, and in conducting and evaluating interventions in the health area, shortcomings of social psychological theories and methods can sometimes be detected which would not show

up in the more easy-going environment of the experimental laboratory. For example, the importance of skill training in behaviour change, which emerged from studies of health behaviour change, has been much less apparent in laboratory studies of attitude and behaviour change. There have also been theoretical developments in health psychology, such as the stage theories of change, which have not yet been assimilated by academic social psychology.

In the process of revising this book I lost my co-author. Such an event would normally not need to be discussed, but since this particular co-author also (still) happens to be my wife, a comment appears in order to prevent misunderstandings. I was (and still am) very sorry Margaret Stroebe decided to drop out of this project, but I had to accept her reasons, namely that other responsibilities would not have allowed her enough time to work on this book. She still managed to be a great support in this endeavour and to help me by providing a sounding board for many of my new ideas.

In writing a book one draws on the help and support of many others. The book profited from the insightful comments of a number of colleagues. I would like to express my gratitude to Klaus Jonas, Rinie Geenen and Mary Gergen for helpful suggestions. I am particularly indebted to Tony Manstead for his patience and for making many valuable suggestions for the improvement of the manuscript. I would also like to thank the members of the Interdisciplinary Workgroup on Social Sciences (ISAG). The biannual meetings of this workgroup during the last two decades, and particularly the many discussions with my friend Bruno Frey, have made me appreciate the value of economic analyses of social behaviour. Finally, I would like to thank Lizet Hoekert, Corrie Brouwer and Ilse Smulders for their assistance in the final preparation of this manuscript.

Wolfgang Stroebe

CHANGING CONCEPTIONS OF HEALTH AND ILLNESS

Good health and a long life are important aims of most persons, but surely no more than a moment's reflection is necessary to convince anyone that they are not the only aim. The economic approach implies that there is an 'optimal' expected length of life, where the value in utility of an additional year is less than the utility foregone by using time and other resources to obtain that year. Therefore, a person may be a heavy smoker or so committed to work as to omit all exercise, not necessarily because he is ignorant of the consequences or 'incapable' of using the information he possesses, but because the lifespan forfeited is not worth the cost to him of quitting smoking or working less intensively . . . According to the economic approach therefore, most (if not all!) deaths are to some extent 'suicides' in the sense that they could have been postponed if more resources had been invested in prolonging life.

(Becker 1976: 10/11)

THE MODERN INCREASE IN LIFE EXPECTANCY

Progress in medical science has been impressive. Knowledge of the body and understanding of disease processes have advanced continuously from the seventeenth century onwards, slowly at first but very rapidly since the turn of the century. This increase in medical knowledge appears to have resulted in a substantial increase in life expectancy. Today the life expectancy at birth in the USA is 76 years as compared to 48 years in 1900 (Matarazzo 1984; Fielding 1999). This increase in longevity has been due mainly to the virtual elimination of those infectious diseases as causes of death that were common at the turn of the twentieth century (e.g. pneumonia and influenza, tuberculosis, diphtheria, scarlet fever, measles, typhoid, poliomyelitis). Thus, whereas approximately 40 per cent of all deaths were accounted for by 11 major infections in 1900, only 6 per cent of all deaths were due to these infectious diseases in 1973 (McKinlay and McKinlay 1981). Between 1981 and 1995 the death rate due to infections has somewhat increased, mainly due to the appearance of a new infectious disease (AIDS). However, in 1996 the trend changed and infectious

Table 1.1 The 10 leading causes of death in the USA: 1900, 1940, 1980 and 1992

| <i>Cause of death</i> | <i>1900</i> | <i>1940</i> | <i>1980</i> | <i>1992</i> |
|-------------------------------------------------------|-------------|-------------|-------------|-------------|
| Pneumonia and influenza | 1 | 5 | 6 | 6 |
| Tuberculosis (all forms) | 2 | 7 | | |
| Diarrhoea, enteritis and ulceration of the intestines | 3 | | | |
| Diseases of the heart | 4 | 1 | 1 | 1 |
| Intracranial lesions of vascular origin | 5 | 3 | | |
| Nephritis (all forms) | 6 | 4 | | |
| All accidents ^a | 7 | 6 | 4 | 5 |
| Cancer ^b | 8 | 2 | 2 | 2 |
| Senility | 9 | | | |
| Diphtheria | 10 | | | |
| Diabetes mellitus | | 8 | 7 | 7 |
| Motor vehicle accidents | | 9 | | |
| Premature birth | | 10 | | |
| Cerebrovascular diseases | | | 3 | 3 |
| Chronic, obstructive pulmonary diseases | | | 5 | 4 |
| Cirrhosis of the liver | | | 8 | |
| Atherosclerosis | | | 9 | |
| Suicide | | | 10 | 9 |
| Human immunodeficiency virus infection | | | | 8 |
| Homicide and legal intervention | | | | 10 |

^a This category excludes motor vehicle accidents in the years 1900 and 1940, but includes them in 1980 and 1992.

^b This category encompasses cancer and other malignant tumours in the years 1900 and 1940 and changes to malignant neoplasms of all types in 1980 and 1992. *Source*: Matarazzo (1984); Gardner *et al.* (1996).

disease deaths began to decrease again (Armstrong *et al.* 1999). Table 1.1 illustrates the significant shift in causes of death during this century.

Because this decline in mortality from infectious diseases happened during a time when medical understanding of the causes of these diseases had vastly improved and when vaccines and other chemotherapeutic medical interventions became widely available, it was only plausible to attribute these changes to the efficacy of the new medical measures. However, this may be yet another example of a premature causal inference from purely correlational evidence. After all, during the same period conditions of life also improved considerably in most industrialized societies. For large populations in Western societies the problem of malnutrition has been solved and some of the most serious threats to health associated with water and food have been removed by improvements in water supply and sewage disposal.

As can be seen from Figure 1.1, which depicts the fall in standardized death rates for the nine common infectious diseases in relation to specific medical measures for the United States, the decline in mortality from these major infectious diseases took place *before* effective medical interventions became available. McKinlay and McKinlay (1981: 26) concluded

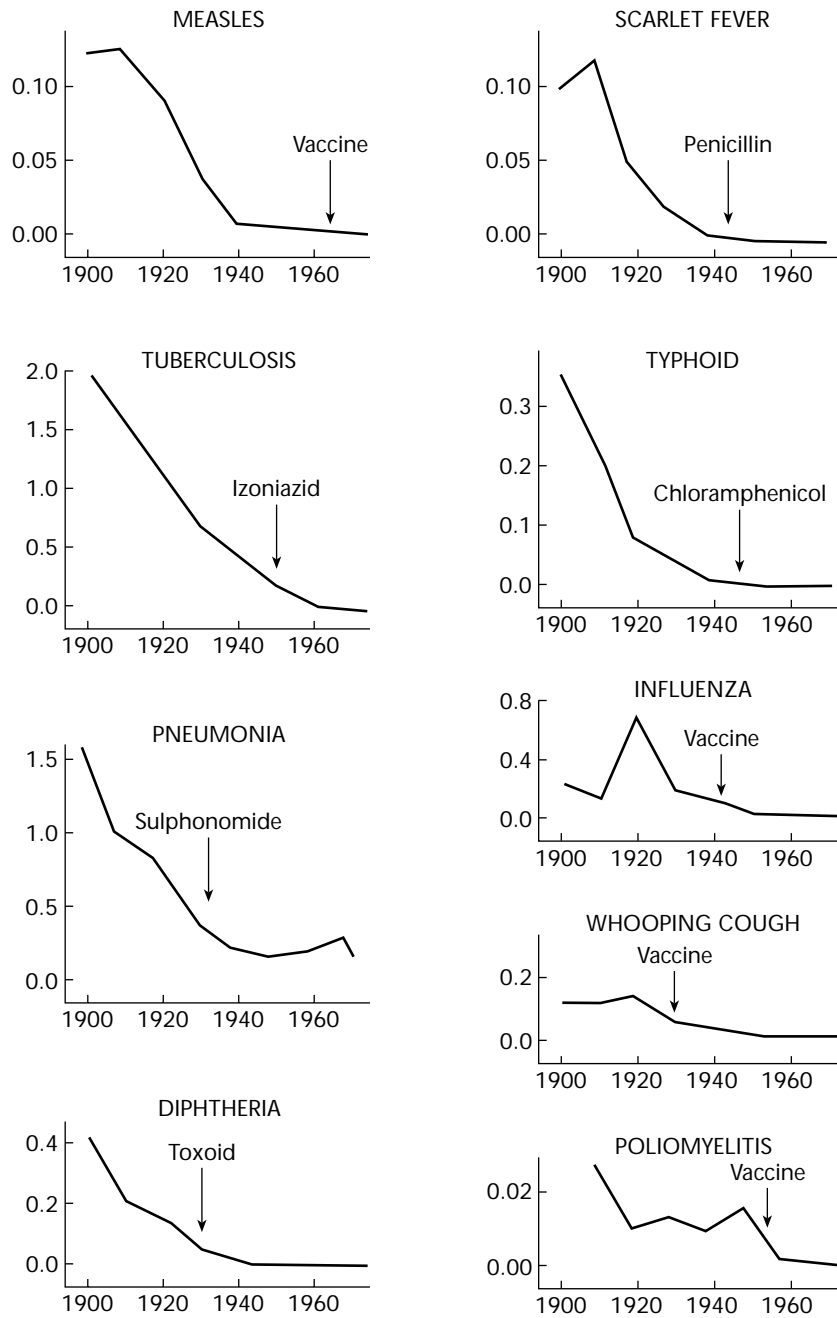


Figure 1.1 The fall in the standardized death rate (per 1000 population) for nine common infectious diseases in relation to specific medical measures in the USA, 1900–1973.

Source: McKinlay and McKinlay (1981).

from their analysis that 'medical measures (both chemotherapeutic and prophylactic) appear to have contributed little to the overall decline in mortality in the United States since about 1900 . . .' Similar conclusions were reached by McKeown (1979) on the basis of an even more extensive analysis of data from England and Wales.

Today, the major killers are cardiovascular diseases (i.e. heart disease and stroke) and cancers, with cardiovascular diseases accounting for approximately 40 per cent of deaths in the USA and other industrialized countries. Although deaths from cardiovascular diseases increased during the first half of this century, this pattern has recently begun to reverse. During the last four decades there has been a small but steady decline in deaths due to heart disease and stroke in the United States and several other industrialized countries.

Improvements in medical treatment undoubtedly contributed to this decline, but the significant changes in lifestyle that occurred in the USA during that period were also responsible. Goldman and Cook (1984) even estimated that more than half of the decline in heart disease mortality observed in the United States between 1968 and 1976 was related to changes in lifestyle, specifically the reduction in serum cholesterol levels and cigarette smoking.

Unfortunately, despite advances in medical treatment and significant lifestyle changes, deaths due to cancer have increased since 1950 in most industrialized countries. This increase in cancer deaths has been almost entirely due to an increase in lung cancer which is responsible for more than one fourth of all cancer deaths (Breslow 1990). However, from 1990 to 1995, there occurred for the first time a continuous and sustainable decline in cancer mortality in the USA of 0.6 per cent per year (Cole and Rodu 1996). Nearly 40 per cent of this decline in cancer mortality resulted from a reduction in lung carcinoma mortality and is thus likely to be due to the reduction of smoking in the USA.

To summarize, the significant increases in life expectancy at birth that occurred during this century in most industrialized countries seem to have been only partially attributable to improvements in medical treatment. There is substantial evidence that a purely medical explanation of these changes would be too narrow. Changes in sanitation, nutrition and lifestyles contributed importantly to the increase in life expectancy.

FROM DISEASE CONTROL TO HEALTH PROMOTION

The marked decline in mortality due to infectious disease during the twentieth century, the vast improvement in average living conditions in Western industrialized nations, and the substantial increase in life expectancy have stimulated considerable rethinking of the meaning of health and of the role of public health institutions in helping to achieve and maintain it (Breslow 1990). Whereas health had long been considered merely the absence of disease and infirmity, people were beginning to emphasize the positive aspects of health. This change in perspective was reflected in the influential definition of health offered by the World Health

Organization (WHO) in its constitution in 1948. The WHO defined health as 'a complete state of physical, mental, and social well-being and not merely the absence of disease or infirmity' (WHO 1948).

There are two important aspects of this definition of health which set it apart from previous definitions (Kaplan *et al.* 1993). First, by emphasizing well-being as the criterion for health, the WHO definition abandoned the traditional perspective of defining health in negative terms, namely as the absence of disease. Second, by recognizing that health status can vary in terms of a number of different dimensions, namely physical, mental and social well-being, the definition abandons the exclusive emphasis on physical health which had been typical of previous definitions (Kaplan *et al.* 1993).

The growing interest in interventions designed to prevent diseases and promote health has led to a change in focus of public health strategies towards a greater emphasis on health promotion. *Health promotion* can be defined as 'any planned combination of educational, political, regulatory, and organizational supports for action and conditions of living conducive to the health of individuals, groups, or communities' (Green and Kreuter 1991: 432). Countries adopting health promotion as policy have directed it mainly at primary prevention through modification of lifestyle factors that account for the largest numbers of deaths (e.g. smoking, drinking too much alcohol, eating a fatty diet, leading a sedentary life). Health promotion influences lifestyles through two strategies, namely health education and fiscal and legislative measures. Education involves the transfer of knowledge or skills. Thus, health education provides individuals, groups or communities with the knowledge about the health consequences of certain lifestyles and with the skills to enable them to change their behaviour. Fiscal or legislative measures such as increasing the tax on tobacco or introducing seat belt legislation are used to change the incentive structure that influences behaviour. Health promotion also uses strategies not directed at lifestyles such as environmental changes aimed at the protection of health (e.g. car safety measures).

THE IMPACT OF BEHAVIOUR ON HEALTH

No single set of data can better illustrate the fact that our health is influenced by the way we live than the findings of a prospective study on the health impact of some rather innocuous health behaviours, conducted by Belloc, Breslow and their colleagues (Belloc and Breslow 1972; Belloc 1973; Breslow and Enstrom 1980). In 1965, these researchers asked a representative probability sample of 6928 residents of Alameda county, California, whether they engaged in the following seven health practices:

- 1 Sleeping seven to eight hours daily.
- 2 Eating breakfast almost every day.
- 3 Never or rarely eating between meals.
- 4 Currently being at or near prescribed height-adjusted weight.
- 5 Never smoking cigarettes.

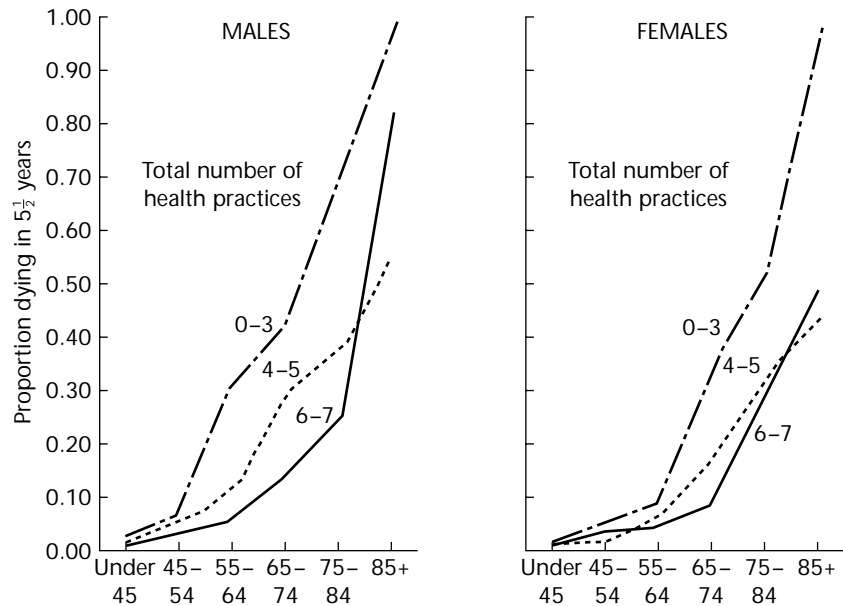


Figure 1.2 Age-specific mortality rates by number of health practices followed by sub-groups of males and females.

Source: Matarazzo (1984).

6 Moderate or no use of alcohol.

7 Regular physical activity.

At the time, it was found that good practices were associated with positive health status, those who followed all the good practices being in better health than those who failed to do so, and that this association was independent of age, sex, and economic status (Belloc and Breslow 1972).

Most striking, however, were the findings of two follow-up studies in which the relationship between these health habits and longevity was explored by using death records. At the first follow-up, conducted five and a half years later, 371 deaths had occurred (Belloc 1973). When the initial health practices in 1965 were then related to subsequent mortality, it was found that the more of these 'good' health practices a person engaged in, the greater was the probability that he or she would survive the next five and a half years (Figure 1.2).

These findings were confirmed at a second follow-up investigation conducted nine and a half years after the initial inquiry, when again an inverse relationship between health practices and age-adjusted mortality rates was observed (Breslow and Enstrom 1980). Men who followed all seven health practices had a mortality rate which was only 28 per cent of that of men who followed zero to three practices; the comparable rate for women who followed all practices was 43 per cent of those who followed zero to three practices. The authors also observed a great stability in the health practices of each individual over the nine and a half year period.

The importance of lifestyle factors for the maintenance of health and the prevention of disease has also been underlined by the outcome of analyses of the contribution of lifestyle factors and other modifiable causes to mortality in the United States. These analyses were conducted by the Centers for Disease Control and Prevention in 1977 and 1990 (McGinnis and Foege 1993). Since both analyses reached very similar conclusions I will focus here on the more recent report. McGinnis and Foege (1993) estimated that of the approximately 2,148,000 deaths that occurred in the USA in the year 1990, nearly 50 per cent were due to modifiable factors. More than 40 per cent of these premature deaths were due to lifestyle factors (e.g. smoking, eating the wrong diet, leading a sedentary lifestyle, consuming too much alcohol, sexual risk behaviour, illicit drug use, firearms, motor vehicle accidents). In addition, the list of modifiable causes includes preventable infectious diseases (excluding HIV) and death caused by toxic agents which may pose a threat to human health as occupational hazards, environmental pollutants, contaminants of food and water supplies, and components of commercial products. All these deaths were premature in the sense that they could have been postponed if individuals or communities had taken appropriate measures.

Findings such as these tend to support Becker's (1976) argument that most deaths are to some extent self-inflicted, at least in the sense that they could have been postponed, if people had engaged in 'good' health practices, like the ones listed by Belloc and Breslow (1972). The important implication of this research at the individual level is that the responsibility for health does not rest with the medical profession alone. Each of us can have a major impact on the state of our own health. At the institutional level, it emphasizes the potential effectiveness of preventive measures (i.e. primary prevention) that focus on persuading people to adopt good health habits and to change bad ones.

It is important to note, however, that life extension (i.e. mere quantity) is only one of the goals of health promotion, and perhaps not even the most important one. We may have to accept that there is a natural limit to our life expectancy and that we are unlikely to reach the age of 140, even with the healthiest of lifestyles (Fries *et al.* 1989). People are persuaded to engage in a healthy lifestyle not merely to lengthen their lives but to help them to stay fit longer and lead an active life right into old age without being plagued by pain, infirmity and chronic disease. Thus, the second major goal of health promotion is to increase the quality of life and to contribute to healthy and successful aging by delaying the onset of chronic disease and extending the active lifespan (Fries *et al.* 1989). Low probability of disease and disease-related disability and high cognitive and physical functional capacity in old age are two of the main components of successful aging (Rowe and Kahn 1987).

THE IMPACT OF STRESS ON HEALTH

The concept of stress has become so much part of common culture that it does not seem to need definition. Reports about health consequences of

everyday stress pervade the advice columns of popular magazines and even teenagers complain to their teachers that they are under undue stress due to an overload of homework. It has become public knowledge that stress, like smoking or drinking too much alcohol, can have adverse effects on physical as well as mental health.

As we will see later in this book (Chapter 6), there is now ample evidence that psychosocial stress results in health impairment. To some extent these health consequences of stressful life events are mediated by the same changes in endocrine, immune and autonomic nervous systems which have been described in the classic work of Selye (e.g. 1976) on the health impact of physical stressors. However, the experience of psychosocial stress also causes negative changes in health behaviour that contribute to the stress-illness relationship (e.g. irregular eating habits, increases in smoking, alcohol consumption and drug intake). Furthermore, stress is often also a result of people's lifestyles. Thus, research on stress and illness is closely related to our interest in the impact of behaviour on health.

FROM THE BIOMEDICAL TO THE BIOPSYCHOSOCIAL MODEL OF DISEASE

That lifestyle factors and psychosocial stress are important determinants of health and illness is difficult to accept within the framework of the biomedical model which has been the dominant model of disease for several centuries (Engel 1977). This model assumes that for every disease, there exists a primary biological cause that is objectively identifiable. Let us exemplify this approach with statements from a typical medical textbook, *Introduction to Human Disease* by Kent and Hart (1987). According to these authors, diseases are caused 'by injury which may be either external or internal in origin . . . External causes of disease are divided into physical, chemical and microbiologic . . . Internal causes of disease fall into three large categories' (vascular, immunologic, metabolic) (1987: 8/9). Because behavioural factors are not considered to be potential causes of disease, they are also not assessed as part of the process of diagnosis.

By focusing only on biological causes of illness, the biomedical model disregards the fact that most illnesses are the result of an interaction of social, psychological and biological events. The logical inference of such a biological conception of disease is that physicians need not be concerned with psychosocial issues because they lie outside their responsibility and authority. Thus, the model has little to offer in guiding the kind of preventive efforts that are needed to reduce the incidence of chronic diseases by changing health beliefs, attitudes and behaviour.

In recognition of these problems, Engel (1977) proposed an expansion of the biomedical model which incorporates psychosocial factors into the scientific equation. The biopsychosocial model maintains that biological, psychological and social factors are all important determinants of health and illness. According to this approach, medical diagnosis should always consider the interaction of biological, psychological and social factors to assess health and make recommendations for treatment.

SOCIAL PSYCHOLOGY AND HEALTH

The growing recognition that lifestyle factors and psychosocial stress contribute substantially to morbidity and mortality from cardiovascular disease, cancer, injuries and other leading causes of death in industrialized countries was one of the factors which in the late 1970s led to the development of health psychology as a field which integrates psychological knowledge relevant to the maintenance of health, the prevention of illness, and the adjustment to illness. Social psychology had, and still has, an important contribution to make to this endeavour, because lifestyles are likely to be determined by health attitudes and health beliefs. Effective prevention has to achieve large-scale changes in lifestyles and such attempts will have to rely on mass communication and thus on an application of social psychological techniques of attitude and behaviour change.

The interest of social psychologists in the study of stress developed more recently, because many of the most stressful life events (e.g. divorce, bereavement) involve a break-up of social relationships. Furthermore, the health impact of stressful events not only depends on the nature of these events but also on the individuals' ability to cope with the crisis and on the extent to which they receive social support from relatives, friends and other members of their social network. Finally, the impact of stress on health, although to some extent due to the brain's influence on physiological processes such as the body's immune response, is also mediated by the adoption of health-impairing habits as coping strategies (e.g. smoking, alcohol abuse). Thus, social factors are not only important in determining the stressful nature of many life events but also as moderators of the stress-health relationship.

Social psychologists have also made important contributions to another major area of health psychology, namely the analysis and improvement of health care systems. This involved issues such as physician-patient relationships, compliance with medical procedures, anxiety as related to medical procedures, and burnout in the helping profession. Although a review of social psychological research on these topics would have been highly relevant in the context of this book, these issues will not be discussed. Due to space limitations any attempt at completely reviewing social psychological contributions to health psychology would have had to remain at a superficial level. Instead I decided to present an in-depth analysis of a number of selected areas. The reader interested in social psychological contributions to research into the health care system should consult the excellent overviews provided by Sarafino (1998) or Taylor (1995).

PLAN OF THE BOOK

Why do people engage in health-impairing behaviour and how can they be influenced? To answer these questions we need to know and understand

the factors and processes that determine the adoption and maintenance of health behaviour. Chapter 2 presents the major models of behaviour from health and social psychology, to provide the theoretical framework for the analysis of determinants of health behaviour. Chapter 3 discusses strategies of behaviour change. I will argue that there are basically two stages to the modification of health behaviour. Individuals first have to be informed of the health hazards of certain behaviour patterns and persuaded to change. This can be achieved by public health interventions such as health education. Because people are often unable to change health-impairing behaviour patterns, a second stage may be necessary in which people are taught how to change and how to maintain this change. This second stage often relies on clinical intervention. Chapter 3 gives an overview of both the public health approach and the methods of clinical intervention.

The next two chapters discuss the major behavioural risk factors that have been linked to health. Chapter 4 focuses on health-impairing behaviour such as smoking, alcohol abuse and overeating. These behaviours are addictive in the sense that, once excessive, they are difficult to control. The self-protective behaviour covered in Chapter 5, such as eating a healthy diet, safeguarding oneself against accidents, and avoiding behaviour associated with the risk of AIDS, are in general somewhat more under the volitional control of the individual. In my discussion of these risk factors I will review both the empirical evidence that links these behaviours to negative health consequences and the effectiveness of public health strategies and/or therapy in modifying these behaviour patterns.

Chapter 6 discusses causes and consequences of psychosocial stress. Stressful life events have been related to an increased risk of morbidity and this health impact is not only mediated by the brain's influence on physiological processes but also by the adoption of health-impairing behaviours as coping strategies.

Chapter 7 reviews extra- and intrapersonal coping resources which help the individual cope with stressful life events. The review of extrapersonal coping resources focuses mainly on the beneficial effects of social support in moderating the impact of stress and discusses psychological mechanisms assumed to mediate this relationship. The discussion of intrapersonal coping resources focuses on hardiness and dispositional optimism. Finally, hostility is discussed as a personality moderator of stress which does not reflect a coping resource.

In summarizing my overall perspective in Chapter 8, I reflect on the contribution of social psychologists to the public health effort through theories and strategies that help to change health-impairing behaviour patterns and reduce psychological stress. I argue for integrated public health interventions that use both persuasion and changes in incentives to influence health-impairing behaviour patterns. I also argue for a reorientation of research on behavioural risk factors which focuses less on extension of total life expectancy and more on the extension of *active* life expectancy and successful aging. It is the reduction of morbidity rather than mortality which makes healthier lifestyles worthwhile for both the individual and society as a whole.

FURTHER READING

McKeown, T. (1979) *The Role of Medicine*. Oxford: Blackwell. A fascinating analysis of the role of medical measures in the decline of mortality over the last few centuries in England and Wales. It shows that for practically all infectious disease the major reduction in mortality occurred long before medical measures to cure them had been discovered.