

CHAPTER 5

CONCLUSION

There were two principal foci of this study. The first was to further understand the roles of, and the relationships between, self-efficacy, health threat, cardiac health locus of control, psychological health and psychological distress, in determining self-reported compliance with recommended health behaviour. In particular, the study attempted to investigate the claim made by Rosenstock, Strecher and Becker (1988) for an expanded Health Belief Model incorporating self-efficacy and health locus of control as components.

The second focus was to attempt to identify whether people at risk of not changing their health behaviour following myocardial infarction could be identified, through measurement of their self-efficacy, outcome expectation, health threat beliefs, cardiac health locus of control, psychological health and level of distress, early in rehabilitation. This would enable further counselling to be given to these people in an effort to reduce their 'at risk' behaviour such as smoking and dietary habits, for example.

Other minor, but psychologically interesting, issues investigated in the course of the study were the durability of the variables investigated over the period of the study, the use of the Multidimensional Cardiac Health Locus of Control Scale and the effectiveness of the Thoughts and Real-life Experiences scale (Dua, 1990) as a measure of psychological distress.

Sixty three men from a major metropolitan public hospital who had experienced an uncomplicated myocardial infarction completed all aspects of the study. These men answered questionnaires prior to discharge from hospital, then 3 months and 6 months later, which measured their self-reported health behaviour, self-efficacy, outcome expectation, perceptions of health threat, health value, cardiac health locus of control, psychological health, psychological distress and a number of demographic variables.

Self-reported health behaviour 3 and 6 months later was found to be independent of demographic variables and severity of infarct. Separate analyses were conducted to investigate how Self-efficacy Theory, the Health Belief Model, Health Locus of Control Theory and variables measuring psychological health and distress might individually predict self-reported health behaviour.

A principal components factor analysis with all independent variables was undertaken to determine possible relationships between the various models used in the study. Reliable factors were then subjected to a regression analysis to determine the best predictor of self-reported health behaviour. Finally, a multiple analysis of variance was conducted to determine the stability of independent variables over the 6 month period.

There were three major problems with the study. The first problem was the use of self-report measures which may cast some doubt on the validity of the findings.

The degree to which the findings can be generalised is the second problem. The sample was relatively small and consisted of only men admitted to one major metropolitan public teaching hospital. While an attempt was made to control for social and physical variables, other factors were not measured that might have exerted an influence on the outcome. Socioeconomic status could have been better evaluated as could level of education.

Differences in the level of understanding of the health behaviour information provided in hospital were also not measured so it is hard to know if health behaviour change was affected by knowledge rather than beliefs. Some patients may have been cared for by more zealous nurses and physicians and may have had their knowledge and understanding reinforced. However, given that the information about desirable health behaviour vis a vis cardiac disease was uncomplicated and all received it, and that health value was high, it seems unlikely that these external forces had a major effect. Nonetheless this and the other aspects of this study mentioned above could have been better controlled.

The third problem had to do with the measures of health threat. Although some studies have had success with fairly simple questionnaires, more confidence in the results would have been obtained with a better constructed questionnaire enabling greater sensitivity and reliability.

Within these constraints, the results of the study have a number of implications both theoretically and practically. While the Health Belief Model, locus of control and self-efficacy all stem from similar theoretical bases, this study sheds doubt on an attempt to incorporate them into the same model. Efficacy expectations, self-efficacy in particular, appear to exert a much greater influence on health behaviour irrespective of other variables. Thus, people's sense of their ability to successfully perform certain behaviours is the principal factor in whether or not they will actually attempt them.

As Rosenstock, Strecher and Becker (1988) point out, the failure to include self-efficacy in research investigating the Health Belief Model may account for much of the unexplained variance. It may also explain inconsistencies in the predictive power of some variables of the Health Belief Model. According to Janz and Becker's (1984) review of 10 years of research involving the health Belief Model, the most consistent factors to affect people's health behaviour were barriers to performing the behaviour rather than perceptions of health threat. Low self-efficacy could be perceived as a barrier (Janz and Becker, 1984).

From a practical point of view, the study supports other indicators that compliance with recommended health action following myocardial infarction could be improved. It would appear that simply providing information is not enough. The findings here suggest that people with low efficacy expectation, identified early in rehabilitation, could receive counselling specifically aimed at improving their self-efficacy. Improving self-efficacy should increase the likelihood of behaviour change.

This research could be repeated with a more controlled sample, more direct measures of health behaviour and with a more sensitive health threat measure. Other studies could also be undertaken to further clarify the roles and relationships between these variables in life threatening situations when health behaviour change is a matter of life and death. Many studies investigating self-efficacy, health locus of control and the Health Belief Model have involved behaviour change when the threat of serious effects is somewhat remote. A controlled intervention study, investigating the effect of changing self-efficacy, health threat and cardiac health locus of control is indicated. Further research with the Thoughts and Real-life Experiences scale also appears warranted with clinical populations.

REFERENCES

- Aho, W. R. (1977) Relationship of wives' preventive health orientation to their beliefs about heart disease in husbands. *Public Health Reports*, 92, 65-71.
- Aho, W. R. (1979) Participation of senior citizens in the Swine Flu inoculation program: an analysis of health belief model variables in preventive health behaviour. *Journal of Gerontology*, 34, 201-208.
- Alogna, M. (1980) Perception of severity of disease and health locus of control in compliant and noncompliant diabetic patients. *Diabetes Care*, 3(4), 533-534.
- Ayllon, T. & Azrin, N. H. (1968) *The token economy: A motivational system for therapy and rehabilitation*. New York: Appleton-Century-Crofts
- Baile, W. F. & Engel, B. F. (1978) A behavioural strategy for promoting treatment compliance following myocardial infarction. *Psychosomatic Medicine*, 40, 413-419
- Balch, P. & Ross, A. W. (1975) Predicting success in weight reduction as a function of locus of control: a unidimensional and multidimensional approach. *Journal of Consulting and Clinical Psychology*, 43, 119.
- Bandura, A. (1969) *Principles of behaviour modification*. New York: Holt Rhinehart and Winston.
- Bandura, A. (1977a) *Social learning theory*. Englewood Cliffs: Prentice Hall.
- Bandura, A. (1977b) Self-efficacy: Towards a unifying theory of behavioural change. *Psychological Review*, 84, 191-215
- Bandura, A. (1978) Reflections on self-efficacy. *Advances in Behaviour Research and Therapy*, 1, 237-269.
- Bandura, A. (1982) Self-efficacy mechanism in human agency. *American Psychologist*, 37, 122-147.

- Bandura, A. (1983) Self-efficacy determinants of anticipated fears and calamities. *Journal of Personality and Social Psychology*, 45, 464-469.
- Bandura, A. (1986) *The social foundations of thought and action*. Englewood Cliffs: Prentice Hall.
- Bandura, A. & Adams, N. E. (1977) Analysis of self-efficacy theory of behaviour change. *Cognitive Therapy and Research*, 1, 287-308.
- Bandura, A., Adams, N.E. & Beyer, J. (1977) Cognitive processes determining behaviour change. *Journal of Personality and Social Psychology*, 35, 125-139.
- Bandura, A., Cioffi, D., Barr Taylor, C. & Brouillard, M. E. (1988) Perceived self-efficacy in coping with cognitive stressors and opioid activation. *Journal of Personality and Social Psychology*, 55(3), 479-488.
- Bandura, A. & Menlove (1968) factors determining vicarious extinction of avoidance behaviour through symbolic modeling. *Journal of Personality and Social Psychology*, 8, 99-108.
- Bandura, A. & Rosenthal, T. L. (1978) Vicarious classical conditioning as a function of arousal level. *Journal of Personality and Social Psychology*, 3, 54-62.
- Bandura, A., Reese, L. & Adams, N. E. (1982) Microanalysis of action and fear arousal as a function of differential levels of perceived self-efficacy. *Journal of Personality and Social Psychology*, 43, 5-21.
- Bandura, A. & Schunk, D. H. (1981) Cultivating competence, self-efficacy and intrinsic interest through proximal self-motivation. *Journal of Personality and Social Psychology*, 41, 586-598.
- Bandura, A., Taylor, C. B., Williams, S. L., Mefford, I. N. & Barchas, J. D. (1985) Catecholamine secretion as a function of perceived coping self-efficacy. *Journal of Consulting and Clinical Psychology*, 53, 406-414.
- Bandura, A. & Walters, R. H. (1963) *Social learning and personality development*. New York: Holt Rhinehart and Winston.

- Barling, J. & Abel, M. (1983) Self-efficacy beliefs and performance. *Cognitive Therapy and Research*, 7, 265-272.
- Barling, J. & Beattie, R. (1985) Self-efficacy beliefs and sales performance. *Journal of Organisational Behaviour Management*, 5, 41-51.
- Beck, A. T. (1976) *Cognitive therapy and the emotional disorders*. New York: International Universities Press.
- Beck, K. H & Lund, A. K. (1982) The effects of health threat seriousness and personal efficacy upon intentions and behaviour. *Journal of Applied Social Psychology*, 11, 401-415.
- Beck, A. T., Weissman, A., Lester, D. & Trexler, L. (1974) The measurement of pessimism: the hopelessness scale. *Journal of Consulting and Clinical Psychology*, 42, 861-865.
- Becker, M. H., Drachman, R. H. & Kirscht, J. P. (1974) A new approach to explaining sick role behaviour in low income populations. *American Journal of Public Health*, 64, 205-216.
- Becker, M. H. & Maiman, L.A. (1975) Sociobehavioural determinants of compliance with health and medical care recommendations. *Medical Care*, 13, 10-24.
- Becker, M. H., , Maiman, L. A., Kirscht, J. P., Haefner, D. P., & Drachman, R. H. (1977) The health belief model and prediction of dietary compliance: A field experiment. *Journal of Health and Social Behaviour*, 18, 348-366.
- Becona, E., Frojan, M. & Lista, M. J. (1988) Comparison between two self-efficacy scales in maintenance of smoking cessation. *Psychological Reports*, 2, 359-362.
- Biran, M. & Wilson, G. T. (1981) Treatment of phobic disorders using cognitive and exposure methods: A self-efficacy analysis. *Journal of Consulting and Clinical Psychology*, 49, 886-899.

- Blumenthal, J. A. & Emery, C. F. (1988) Rehabilitation of patients following myocardial infarction. *Journal of Consulting and Clinical Psychology*, 56(3), 374-381.
- Broome, A.K. ed (1989) *Health psychology: processes and applications*. London: Chapman and Hall.
- Burling, T. A., Singleton, E. G., Bigelow, E. G., Baile, W. F. & Gotleib, S. H. (1984) Smoking following myocardial infarction. *Health Psychology*, 3, 83-96.
- Byrne, D. G. & Whyte, H. M. (1978) Dimensions of illness behaviour in survivors of myocardial infarction. *Journal of Psychosomatic Research*, 22, 485-491.
- Byrne, D.G., Whyte, H.M. & Butler, K.L. (1981) Illness behaviour and outcome following survived myocardial infarction: A prospective study. *Journal of Psychosomatic Research*, 25(2), 97-107.
- Calnan, M. & Moss, S. (1984) The health belief model and compliance with education given at a class in breast self-examination. *Journal of Health and Social Behaviour*, 25, 198-210.
- Carter, W., Beach, L., Innui, T., Kirscht, J. P. & Prodzinski, J. (1986) Developing and testing a decision making model for predicting influenza vaccination compliance. *Health Services Research*, 20(6), 897-932.
- Carmody, T., Fey, S. G., Pierce, D. K., Connor, W. E. & Matarazo, J. D. (1982) Behavioural treatment of hyperlipidaemia: Techniques, results and future directions. *Journal of Behavioural Medicine*, 5(1), 91-116.
- Carmody, T., Senner, J., Matinow, M & Matarazzo, J. (1980) Physical exercise rehabilitation: Long-term dropout rate in cardiac patients. *Journal of Behavioural Medicine*, 3, 113-168.
- Cassem, N.H. & Hackett, T.P. (1971) Psychiatric consultation in a coronary care unit. *Annals of Internal Medicine*, 5, 9-14.

- Cay, E. L., Vetter, N. J., Phillip, A. E. & Dugard, P. (1972) Psychological status during recovery from a heart attack. *Journal of Psychosomatic Research*, 16, 425-435.
- Chambliss, C. & Murray, E. J. (1979) Cognitive procedures for smoking reduction: symptom attribution versus efficacy attribution. *Cognitive Therapy and Research*, 3, 91-95.
- Champion, V. L. (1988) Attitudinal variables related to intention, frequency and proficiency of breast self-examination in women 35 and over. *Research in Nursing and Health*, 11, 283-291.
- Colletti, G., Supnick, J. A. & Payne, T. J. (1985) The smoking self-efficacy questionnaire (SSEQ): preliminary scale development and validation. *Behavioural Assessment*, 249-260.
- Conditte, M.M. & Lichtenstein, E. (1981) Self-efficacy and relapse in smoking cessation programs. *Journal of Consulting and Clinical Psychology*, 49, 648-658.
- Contento, I. R. & Murphy, B. M. (1990) Psycho-social factors differentiating people who reported making desirable changes in their diets from those who did not. *Journal of Nutrition Education*, 22(1), 6-14.
- Cooper, D. & Fraboni, M. (1988) Toward a more valid and reliable health locus of control scale. *Journal of Clinical Psychology*, 44(4), 536-540.
- Cromwell, R., Butterfield, E., Brayfield, F. & Curry, J (1977) *Acute myocardial infarction: reaction and recovery*. St Louis: Mosby.
- Cummings, K. M., Jette, A. M. & Brock, B. M. (1979) Psychosocial determinants of immunisation behaviour in a Swine Influenza campaign. *Medical Care*, 17, 639-649.
- Davies, F. W. & Yates, NB. T. (1982) Self-efficacy expectancies versus outcome expectancies as determinants of performance deficits and depressive affect. *Cognitive Therapy and Research*, 6, 23-35.

- Davison, G. C. & Neale, J. M. (1978) *Abnormal psychology*. New York: John Wiley and Sons.
- Dellipiani, A. W., Cay, E. L., Phillip, A. E., Vetter, N. J., Colling, W. A., Donaldson, R. J. & McCormack, P. (1976) Anxiety after a heart attack. *British Heart Journal*, 38, 752-759.
- Devins, G.M. & Edwards, P.J. (1988) Self-efficacy and smoking reduction in chronic obstructive pulmonary disease. *Behaviour Research and Therapy*, 26(2), 127-135.
- DiClemente, C.C. (1981) Self-efficacy and smoking cessation maintenance. *Cognitive Therapy and Research*, 5, 175-181.
- DiClemente, C.C., Prochaska, J.O. & Gilbertini, M. (1985) Self-efficacy and the stages of self-change of smoking. *Cognitive Therapy and Research*, 9, 181-200.
- DeVellis, R. F., DeVellis, B. M., Wallston, B.S. & Wallston, K.A. (1980) Epilepsy and learned helplessness. *Basis and Applied Social Psychology*, 1, 241-253.
- Donham, G. W., Ludenia, K., Sands, M. M. & Holtzer, P. D. (1983) Personality correlates of health locus of control with medical inpatients. *Psychological Reports*, 52, 659-666.
- Duda, J. L. & Tappe, M. K. (1988) Predictors of personal investment in physical activity among middle-aged and older adults. *Perceptual and Motor Skills*, 66, 543-549.
- Dua, J. K. (1987) *A scale for the measurement of stress*. Paper presented at the Behavioural Medicine Conference, Sydney.
- Dua, J. K. (1989) Effectiveness of meditation and cognitive restructuring in reducing distress. In P. Lovibond and P. Wilson (Eds). *Proceedings of the XXIV International Congress of Psychology: Vol 9*. Amsterdam: Elsevier Science Publishers, B. V.
- Dua, J. K. (1990) Assessment of positive and negative affect as a result of thoughts and real-life experiences. *Behaviour Change*, 7(2), 62-65.

- Ellis, A. (1977) The basic clinical theory of rational-emotive-therapy. In A. Ellis and R. Grieger (Eds), *Handbook of rational-emotive-therapy*. New York: Springer.
- Ewart, C. K., Taylor, C. B., Reese, L. B. & DeBusk, R.F. (1983) The effects of early postmyocardial infarction exercise testing on self-perception and subsequent physical activity. *American Journal of Cardiology*, 51, 1076-1080.
- Eysenck, H. J.(1952) The effects pf psychotherapy: An evaluation. *Journal of Consulting Psychology*, 16, 319-324.
- Eysenck, H. J.(1978) Expectations as causal elements in behavioural change. In S. Rachman. (Ed) *Advances in behaviour research and therapy*. Oxford: Pergamon.
- Flanders, P. & McNamara, J. R. (1984) Prediction of compliance with an over-the-counter acne medication. *The Journal of Psychology*, 118, 31-36.
- Folkman, S. & Lazarus, R. S. (1984) Coping as a mediator of emotion. *Journal of Personalty and Social Psychology*, 54(3), 466-475.
- Friedman, M., Thoreson, C. E., Gill, J. J., Powell, L. H., Ulmer, D., Thompson, L., Price, V. A., Rabin, D.D., Breall, W. S., Dixon, T., Levy, R. & Bourg, E. (1984) Alteration of type A behaviour and reduction in cardiac recurrences in postmyocardial infarction patients. *American Heart Journal*, 108(2), 237-248.
- Froelicher, V. F. (1983) *Exercise testing and training*. New York: Le Jacq Publishing.
- Garcia, M. E., Schmitz, J. M. & Doerfler, L. A. (1990) A fine grained analysis of self-efficacy in sef-initiated attempts to quit smoking. *Journal of Consulting and Clinical Psychology*, 58(3), 317-322.
- Genest, M, & Tusk, D. C. (1981) Think-aloud aproaches to cognitive assessment. In T. V. Merluzzi, C. R. Glass & M. Genest (Eds), *Cognitive Assessment*. New York: The Guildford Press.
- Gierszewski, S. A. (1983) The relationship of weight loss, locus of control and social support. *Nursing Research*, 32(1), 43-47.

- Gilchrist, L. D. & Schinke, S.P. (1983) Coping with contraception: cognitive and behavioural methods with adolescents. *Cognitive Therapy and Research*, 7, 379-388.
- Given, C. W., Given, B. A., Gavin, R.S. & Condon, J. W. (1983) Development of scales to measure health beliefs. *Research in Nursing and Health*, 6, 127-141.
- Gochman, D. S. (1988) *Health behaviour: Emerging research perspectives*. New York: Plenum.
- Godding, P. R. & Glasgow, R.E. (1987) Self-efficacy and outcome expectations as predictors of controlled smoking status. *Cognitive Therapy and Research*, 6, 243-248.
- Goldberg, D.P. (1972) *The detection of psychiatric illness by questionnaire*. London: Oxford University Press.
- Goldberg, D. P. (1977) *Manual of the general health questionnaire*. Berks: Nelson Publishing Company.
- Goldberg, D. P. & Williams, P. (1988) *A user's guide to the General Health Questionnaire*. Windsor, Berkshire: NFER-Nelson.
- Goldberg, D. P. & Hillier, V. F. (1979) A scaled version of the General Health Questionnaire. *Psychological Medicine*, 9, 139-145.
- Goldberg, D. P., Rickels, K., Downing, R., & Hesbacher, P. (1976) A comparison of two psychiatric screening tests. *British Journal of Psychiatry*, 129, 61-67.
- Hackett, T. P., Cassem, N. H. & Wishnie, H. A. (1968) The coronary care unit: an appraisal of its psychological hazards. *The New England Journal of Medicine*, 279, 1365-1370.
- Hall, S.M., Bachman, J., Henderson, J.B., Barstow, R. & Jones, R.T. (1983) Smoking cessation in patients with cardiopulmonary disease: An initial study. *Addictive Behaviours*, 8, 33-42.

- Hallal, J. C. (1982) The relationship between health beliefs, health locus of control and self concept to the practice of breast self-examination in adult women. *Nursing Research*, 31, 137-142.
- Hallam, R. & Rachman, S. (1976) Current status of aversion therapy. In *Progress in behaviour modification*, eds. M. Herson, R. M. Eisler and P. M. Miller, vol 2. New York: Academic Press.
- Hamilton, M. (1960) A rating scale for depression. *Journal of Neurological Neurosurgical Psychiatry*, 3, 56-62.
- Hartke, R. J. & Kuncze, J. T. (1982) Multidimensionality of health locus of control items. *Journal of Consulting and Clinical Psychology*, 50, 594-595.
- Hartman, P. E. & Becker, M. H. (1978) Non-compliance with prescribed regimen among chronic haemodialysis patients. *Dialysis and Transplantation*, 7, 978-985.
- Hase, S & Douglas, A. J. (1986) The effect of relaxation on the outcome from myocardial infarction. *Australian Journal of Advanced Nursing*, Dec, 13-16.
- Havik, O.E. & Maeland, J.G. (1988) Changes in smoking behaviour after a myocardial infarction. *Health Psychology*, 7(5), 403-420.
- Hayes, D. & Ross, C.E. (1987) Concern with appearance, health beliefs and eating habits. *Journal of Health and Social Behaviour*, 28, 120-130.
- Haynes, S.G., Levine, S., Scotch, N., Feinleib, M. & Kannel, W.B. (1978) The relationship of psychological factors to coronary heart disease in the Framingham study: Methods and risk factors. *American Journal of Epidemiology*, 107, 362-383.
- Horlick, L., Cameron, R., Firor, W., Bhalerao, U. & Baltzan, R. (1984) The effects of education and group discussion in the post myocardial infarction patient. *Journal of Psychosomatic Research*, 28(6), 485-492.
- Houts, S. S. & Warland, R. H. (1989) Rotter's social learning theory of personality and dietary behaviour. *Journal of Nutrition Education*, 21(4), 172-178.

- Janz, N. K. & Becker, M. H. (1984) The health belief model: a decade later. *Health Education Quarterly*, 11(1), 1-47.
- Jeffrey, R. W. (1988) Dietary risk factors and their modification in cardiovascular disease. *Journal of Consulting and Clinical Psychology*, 56(3), 350-357.
- Jeffrey, R. W., Bjornson-Benson, W.M., Rosenthal, B.S., Lindquits, R. A., Kurth, C. L. & Johnson, S. L. (1984) Correlates of weight loss and its maintenance over two years of follow-up among middle aged men. *Preventive Medicine*, 13, 155-168.
- Jenkins, C. D. (1988) Epidemiology of cardiovascular disease. *Journal of Consulting and Clinical Psychology*, 56(3), 324-332.
- Jette, A. M., Cummings, K. M., Brock, B. M., Phelps, M.C. & Naessens, J. (1981) The structure and reliability of health belief indices. *Health Services Research*, 16(1), 81-98.
- Kanfer, R. & Zeiss, A.M. (1983) Depression, interpersonal standards setting and judgements of self-efficacy. *Journal of Abnormal Psychology*, 92, 319-329.
- Kaplan, R.M., Atkins, C.J. & Reinsch, S. (1984) Specific self-efficacy expectations mediate exercise compliance in patients with COPD. *Health Psychology*, 3, 223-242.
- Kazdin, A. E. (1982) The token economy: A decade later. *Journal of Applied Behaviour Analysis*, 15, 431-446.
- Kent, G. & Gibbons, R. (1987) Self-efficacy and the control of anxious cognitions. *Journal of Behaviour Therapy and Experimental Psychiatry*, 18(1), 33-40.
- King, N. J. & Remenyi, A. (1986) *Health care: A behavioural approach*. Sydney: Grune and Stratton.
- Kirsch, I. (1982) Efficacy expectations or response predictions: The meaning of efficacy ratings as a function of task characteristics. *Journal of Personality and Social Psychology*, 42(1), 132-136.

- Kirsch, I. (1985) Self-efficacy and expectancy: Old wine with new labels. *Journal of Personality and Social Psychology*, 49(3), 824-830.
- Kirscht, J. P. (1974) The health belief model and illness behaviour. *Health Education Monographs*, 2, 387-408
- Kirscht, J. P. (1988) The health belief model and predictions of health actions in D. S. Gochman, . *Health behaviour: emerging research and perspectives*. New York: Plenum Press.
- Kirscht, J. P. & Rosenstock, I. M. (1977) Patient compliance to antihypertensive medical regimens. *Journal of Community Health*, 3, 115-124.
- Kim, K.K., Horan, M.L., Gendler, P., & Patel, M.K. (1991) Development and Evaluation of the osteoporosis health belief scale, *Research in Nursing and Health*, 14, 155-163.
- King, J.B. (1982) The impact of patients' perceptions of high blood pressure on attendance at screening. *Science and Medicine*, 16, 1079-1091
- Kinney, P. J. & Williams, S. L. (1988) Accuracy of fear inventories and self-efficacy scales in predicting agoraphobic behaviour. *Behaviour Research and Therapy*, 26(6), 513-518.
- Klepac, R. K., Darling, J. & Hauge, G. (1982) Characteristics of clients seeking therapy for the reduction of dental avoidance: reactions to pain. *Journal of Behaviour therapy and Experimental Psychiatry*, 13, 293-300.
- Kores, R. C., Murphy, W. D., Rosenthal, T. L., Elias, D. B. & North, W. C. (1990) Predicting outcome of chronic pain treatment via a modified self-efficacy scale. *Behaviour Research and Therapy*, 28(2), 165-169.
- Krantz, D.S. (1980) Cognitive processes and recovery from heart attack: A review and theoretical analysis. *Journal of Stress*, 6, 27-38.
- Langosch, W., Seer, P., Brodner, G., Kallinke, D, Kuluck, B. & Heim, F. (1982) Behaviour therapy with coronary heart disease patients: Results of a comparative study. *Journal of Psychosomatic Research*, 26(5), 475-484.

- Langlie, J. K. (1977) Social networks, health beliefs and preventive health behaviour. *Journal of health and Social Behaviour*, 18, 244-260.
- Larson, E. B., Bergman, J. & Heidrich, F. (1982) Do postcard reminders improve influenza vaccination compliance? *Medical Care*, 20, 639-648.
- Lau, R.. (1988) Beliefs about control and health behaviour in D. S. Gochman,. *Health behaviour: emerging research and perspectives*. New York: Plenum Press.
- Lawrance, L., Levy, S. R. & Rubinson, L. (1990) Self-efficacy and AIDS prevention for pregnant teens. *Journal of School Health*, 60(1), 19-24).
- Lazarus, R.S. (1982) Thoughts on the relations between emotion and cognition. *American Psychologist*, 37, 1019-1024.
- Lee, C. (1989) Theoretical weaknesses lead to practical problems: The example of self-efficacy theory. *Journal of behaviour Therapy and Experimental Psychiatry*, 20(2), 115-123.
- Lefcourt, H. M. (1976) *Locus of control: current trends in theory and research*. Hillsdale: Erlbaum.
- Leitenberg, H. (1976) *Handbook of behavioural modification and behaviour therapy*. Englewood Cliffs: Prentice-Hall
- Levenson, H. (1973) Multidimensional locus of control in psychiatric patients. *Journal of Consulting and Clinical Psychology*, 41, 397-404.
- Lewin, K, (1935) *A Dynamic theory of Personality*. New York: McGraw Hill.
- Lipid Research Clinics Program (1984) The lipid research clinics coronary primary prevention trial results. *JAMA*, 251, 351-374.
- Litt, M. D. (1988) Self-efficacy and perceived control: Cognitive mediators of pain tolerance. *Journal of Personality and Social Psychology*, 54(1), 149-160.
- Locke, H.G. & Wallace, K.M. (1959) Short marital adjustment and prediction tests: their validity and reliability. *Marriage and Family Living*, 21, 251-255.

- Lorig, K., Chastain, R. L., Ung, E., Shoor, S. & Holman, H. R. (1986) Development and evaluation of a scale to measure perceived self-efficacy in people with arthritis. *Arthritis and Rheumatism*, 32(1), 37-44.
- Maddux, J.E. & Rogers, R.W. (1983) Protection motivation and self-efficacy: A revised theory for fear appeals and attitude change. *Journal of Experimental Social Psychology*, 19, 469-479.
- Mahoney, M. J. (1974) *Cognition and behaviour modification*. Cambridge: Ballinger.
- Masters, W. & Johnson, V (1970) *Human sexual inadequacy*. Boston: Little Brown.
- Matarazzo, J. D. (1980) Behavioural health and behavioural medicine: Frontiers for a new health psychology. *American Psychologist*, 35, 807-817.
- Mayou, R. (1981) Effectiveness of cardiac rehabilitation. *Journal of Psychosomatic Research*, 25, 423-427.
- Mayou, R, Williamson, B & Foster, A. (1976) Attitudes and advice after myocardial infarction. *British Medical Journal*, 2, 1577-1579.
- Meichenbaum, D. (1977) *Cognitive-behaviour modification: An interpretive approach*. New York: Plenum Press.
- Miller, N. E. (1978) Biofeedback and visceral learning. *Annual Review of Psychology*, 29, 373-404.
- Mischel, W. (1981) A cognitive social learning approach to assessment. In T. V. Merluzzi, C. R. Glass & M. Genest (Eds), *Cognitive Assessment*. New York: The Guildford Press.
- Mulcahy, R. (1983) Influence of cigarette smoking on morbidity and mortality after myocardial infarction. *British Heart Journal*, 49, 410-415.
- Mumford, E., Schlesinger, H. J. & Glass, G. (1982) The effects of psychological intervention following surgery and heart attacks: an analysis of the literature. *American Journal of Public Health*, 72, 141-151.

- Murray, P. J. (1989) Rehabilitation information and health beliefs in the post-coronary patient: Do we meet their information needs? *Journal of Advanced Nursing*, 14, 686-693.
- Newson-Smith, J & Hirsch, S. (1978) *A study of neurotic symptoms in overdose patients using the General Health Questionnaire and the Present State Examination* in D.P. Goldberg (1978) *Manual of the General Health Questionnaire*. Manchester: Nelson.
- Nicholson, J. (1980) *Childbirth events and changes in maternal health locus of control*. Paper presented at the symposium on issues in control and health at the meeting of the American Psychological Association, Montreal.
- Nicki, R. M., Remington, R. E. & MacDonald, G. A. (1984) Self-efficacy, nicotine fading/self monitoring and cigarette smoking behaviour. *Behaviour Research and Therapy*, 22(5), 477-485.
- Nisbeett, R. E. & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review*, 84, 231-259.
- Norris, R. M., Caughey, D. E. & Mercer, C. J. (1970) Coronary Prognostic Index for predicting survival after recovery from acute myocardial infarction. *Lancet*, 2, 485-488.
- Oldenburg, B., Perkins, R.J. & Andrews, G. (1985) Controlled trial of psychological intervention in myocardial infarction. *Journal of Consulting and Clinical Psychology*, 53(6), 852-859.
- O'Leary, A. (1985) Self-efficacy and health. *Behaviour Research and Therapy*, 23(4), 437-451.
- O'Leary, A., Shoor, S., Lorig, K. & Holman, H. R. (1988) A cognitive-behavioural treatment for rheumatoid arthritis. *Health Psychology*, 7(6), 527-544.
- O'Looney, B. & Barrett, P. (1983) A psychometric of the Multidimensional Health Locus of Control questionnaire. *Journal of Clinical Psychology*, 22, 217-218.
- Pavlov, I. P. (1927) *Conditioned reflexes: An investigation of the physiological activity of the cerebral cortex*. New York: Oxford University Press.

- Philip, A.E. (1987) Emotional upset after myocardial infarction-How should it be conceptualised and measured? *International Journal of Rehabilitation Research*, 10(4), 191-195.
- Pomeroy, S. M. (1988) Dietary advice to patients for lowering plasma cholesterol. *Notes on Cardiovascular Diseases National Heart Foundation*, 23(3), 9-12.
- Porth, C.M. (1990) *Pathophysiology: Concepts of altered states*. Philadelphia: J. B. Lippincott.
- Prochaska, J. O., Crimi, P., Lapsanski, D., Martel, L. & Reid, P. (1982) Self-change processes, self-efficacy and self-concept in relapse and maintenance of cessation of smoking. *Psychological Reports*, 51, 983-990.
- Prosser, G., Carson, P. & Phillips, R. (1985) Exercise after myocardial infarction: long-term rehabilitation effects. *Journal of Psychosomatic Research*, 29(5), 535-540.
- Rachman, S. & Hodgson, R. (1980) *Obsessions and compulsions*. Englewood Cliffs: Prentice-Hall.
- Razin, A. (1982) Psychological interventions in coronary heart disease: a review. *Psychosomatic Medicine*, 44, 363-387.
- Rist, F. & Watzl, H. (1983) Self assessment of relapse risk and assertiveness in relation to treatment outcome of female alcoholics. *Addictive Behaviours*, 8, 121-127.
- Rosenstock, I. M. (1960) What research in motivation suggests for public health. *American Journal of Public Health*, 50(3), 295-301.
- Rosenstock, I. M. (1966) Why people use health services. *Milbank Memorial Fund Quarterly*, 44, 94-127.
- Rosenstock, I. M. (1974) Historical origins of the health belief model. *Health Education Monographs*, 2, 328-335.
- Rosenstock, I. M. (1988) Adoption and maintenance of lifestyle modifications. *American Journal of Preventative Medicine*, 4(6), 349-352.

- Rosenstock, I.M., Strecher, V.J. & Becker, M.H. (1988) Social learning theory and the health belief model, *Health Education Quarterly*, 15(2), 175-183.
- Rotter, J. B. (1954) *Social learning and clinical psychology*. Englewood Cliffs: Prentice-Hall.
- Rotter, J. B. (1966) Generalised expectancies for internal versus external locus of control of reinforcement. *Psychological Monographs*, 80, 609-615.
- Rotter, J. B. (1975) Some problems and misconceptions related to the construct of internal versus external control of reinforcement. *Journal of Consulting and Clinical Psychology*, 43, 56-67.
- Rotter, J. B., Chance, J. E. & Phares, E. J. (1972) *Applications of social learning theory of personality*. New York: Holt, Rinehart and Winston.
- Rundall, T. G. & Wheeler, J. R. C. (1979) The effect of income on use of preventive care: an evaluation of alternative explanations. *Journal of Health and Social Behaviour*, 20, 397-406.
- Russell, S. & Ludenia, K. (1983) The psychometric properties of the Multidimensional Health Locus of Control Scale in an alcoholic population. *Journal of Consulting and Clinical Psychology*, 39, 453-459.
- Sackett, D. & Haynes, B. (1976) *Compliance with therapeutic regimens*. Baltimore: John Hopkins University.
- Schwartz, G. E. (1983) Testing the biopsychosocial model: The ultimate challenge facing behavioural medicine? *Journal of Consulting and Clinical Psychology*, 50, 1040-1053.
- Shelton, S. H. (1990) Developing the construct of general self-efficacy. *Psychological Reports*, 66, 987-994.
- Sherer, M. & Adams, C. H. (1983) Construct validation of the self-efficacy scale. *Psychological Reports*, 53, 899-902.

- Sherer, M., Maddux, J. E., Mercadante, B., Prentice-Dunn, S., Jacobs, B. & Rogers, R. W. (1982) The self-efficacy scale: Construction and validation. *Psychological Reports, 51*, 663-671.
- Seeman, M. & Evans, J. W. (1962) Alienation and learning in a hospital setting. *American Sociological Review, 27*, 772-783.
- Shelton, S. H. (1990) Developing the construct of general self-efficacy. *Psychological Reports, 66*, 987-994.
- Siegal, D., Grady, D., Browner, W. S. & Hulley, S.B. (1988) Risk factor modification after myocardial infarction. *Annals of Internal Medicine, 109*, 213-218.
- Shiffman, S. (1982) Relapse following smoking cessation: A situational analysis. *Journal of Consulting and Clinical Psychology, 50*, 71-86.
- Skinner, B. F. (1971) *Beyond freedom and dignity*. New York: Alfred Knopf.
- Skinner, B. F. (1987) Whatever happened to psychology as the science of behaviour? *American Psychologist, 42*(8), 780-786.
- Smith, G. R. & O' Rourke, D. F. (1988) Return to work after a first myocardial infarction. *Journal of the American Medical Association, 259*(11), 1673-1677.
- Society of Hospital Pharmacists of Australia (1985) *Pharmacology and drug information for nurses*. 2nd Edition. Sydney: W. B. Saunders
- Speake, D. L., Cowart, M. E. & Pellet, K. (1989) Health perceptions of the elderly. *Research in Nursing and Health, 12*, 93-100.
- Spielberger, C.D., Gorsuch, R.L. & Lushene, R.E. (1970) *The stait-trait anxiety inventory*. Palo Alto: Consulting Psychologists Press.
- Stamler, J. Wentworth, D. & Neaton, J. D. (1986) Is relationship between serum cholesterol and risk of premature death from coronary heart disease continuous and graded? *Journal of the American Medical Association, 256*, 2823-2828.

- Stanley, M. A. & Maddux, J. E. (1986) Cognitive processes in health enhancement: investigation of a combined protection motivation and self-efficacy model. *Basic and Applied Psychology*, 7(2), 101-113.
- Strecher, V. J., Becker, M., Kirscht, J., Eraker, S. & Graham-Tomasi, R. (1985). Psychosocial aspects of changes in cigarette-smoking behaviour. *Patient Education and Counselling*, 7, 249-262.
- Strecher, V.J., DeVellis, B.M., Becker, M.H. & Rosenstock, I.M. (1986) The role of self-efficacy in achieving health behaviour change. *Health Education Quarterly*, 13(1), 73-92.
- Stress Working Party (1988) Stress and cardiovascular disease: A report from the National Heart Foundation of Australia. *The Medical Journal of Australia*, 148, 510-514.
- Strickland, B. R. (1978) Internal-external expectancies and health-related behaviours. *Journal of Consulting and Clinical Psychology*, 46, 1192-1211.
- Summers, J., Borland, R. & Walker, M. (1989) *Psychology: An introduction*. Brisbane: John Wiley.
- Tabachnick, B.G. & Fidell, L.S. (1989) *Using multivariate statistics*. (2nd ed.) New York: Harper and Rowe.
- Taylor, C. BN., Bandura, A., Ewart, C.K., Miller, N.H. & DeBusk, R.F. (1985) Raising spouse's and patient's perception of his cardiac capabilities following a myocardial infarction. *American Journal of Cardiology*, 55, 635-638.
- Tipton, B. & Worthington, I. (1986) Self-efficacy and personality. *Journal of Consulting and Clinical Psychology*, 54, 765-772.
- Tolman, E.C. (1932) *Purposive Behaviour in Animals and Men*. New York: Appleton-Century Crofts.
- Tonkin, A. (1988) Cardiovascular risk factors and mortality. *The Medical Journal of Australia of Australia*, 148, 57-58.

- Tolor, A. (1978) Some antecedents and personality correlates of health locus of control in a rehabilitation setting. *Journal of Clinical and Consulting Psychology, 42*, 321-323.
- Umlauf, R. and Frank, R. (1986) Multidimensional health locus of control in a rehabilitation setting. *Journal of Clinical Psychology, 42(1)*, 126-128.
- Wallston, K. A. & Wallston, B. S. (1978) Locus of control and health: a review of the literature. *Health Education Monographs, 6*, 107-117.
- Wallston, K. A. & Wallston, B. S. (1981) Health locus of control scales. In Lefcourt, H. M. (ed) *Research with the health locus of control construct*. New York: Academic Press.
- Wallston, K. A. & Wallston, B. S. (1982) Who is responsible for your health? The construct of health locus of control. In G. S. Sanders, G. and J. Suls, *Social Psychology of Health and Illness*. Hillsdale: Erlbaum.
- Wallston, K. A., Maides, S. & Wallston, B. S. (1976) Health related information seeking as a function of health related locus of control and health value. *Journal of Research in Personality, 10*, 215-222.
- Wallston, B.S., Wallston, K. A., Kaplan, G. D. & Maides, S. A. (1976) Development and validation of the health locus of control scale. *Journal of Consulting and Clinical Psychology, 44*, 580-585.
- Wallston, K. A., Wallston, B. S. & DeVellis, R. (1978) Development of the Multidimensional Health Locus of Control (MHLC) Scales. *Health Education Monographs, 6*, 160-171.
- Weinberg, R.S., Hughes, H.H., Critelli, J.W., England, R., & Jackson, A. (1984) Effects of preexisting and manipulated self-efficacy on weight loss in a self-control program. *Journal of Personality Research, 18*, 352-358.
- Weinberger, M, Greene, J.Y., Mamlin, J.J. & Jerin, J.J. (1981) Health beliefs and smoking behaviour. *Public Health Briefs, 71(11)*, 1253-1255.

- Weissfeld, J. L., Kirscht, J. P. & Brock, B. M. (1990) Health beliefs in a population: The Michigan blood pressure survey. *Health Education Quarterly*, 17(2), 141-155.
- Wiklund, I., Sarne, H., Vedin, A. & Wilhelmsson, C. (1984) Psychosocial outcome one year after a first myocardial infarction. *Journal of Psychosomatic Research*, 28, 309-321.
- Wilhelmsson, C., Vedin, J. A., Elmfeldt, D., Tibblin, G. & Wilhelmsson, L. (1975) Smoking and myocardial infarction. *Lancet*, 1, 415-420.
- Williams, S. L. & Watson, N. (1985) Perceived danger and perceived self-efficacy as cognitive mediators of agoraphobic behaviour. *Behaviour Therapy*, 16, 136-146.
- Wilson, G. T. & O'Leary, K. D. (1980) *Principles of behaviour therapy*. Englewood Cliffs: Prentice-Hall.
- Wilson, D. K., Wallston, K. A. & King, J. E. (1990) Effects of contract framing, motivation to quit and self-efficacy on smoking reduction. *Journal of Applied Social Psychology*, 20(7), 531-547.
- Wolk, S. & Bloom, D. (1977) The interactive effects of locus of control and situational stress upon performance accuracy and time. *Journal of Applied Social Psychology*, 7, 279-298.
- Wolpe, J. (1958) *Psychotherapy and reciprocal inhibition*. Stanford: Stanford University Press.
- Worcester, A. (1986) *Cardiac Rehabilitation in Australian Hospitals*. Canberra: National Heart Foundation
- Wurtele, S. K., Roberts, M. C. & Leeper, J. D. (1982) Health beliefs and intentions: predictors of return compliance in a tuberculosis detection drive. *Journal of Applied Social Psychology*, 12(2), 128-136.
- Wynn, A. (1968) Unwarranted emotional distress in men with ischaemic heart disease. *The Medical Journal of Australia*, 2, 847-851.