THE DEAKIN COPING SCALE: STRATEGIES FOR THE MANAGEMENT OF DEMANDS

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ABSTRACT

The aim of this paper is to present The Deakin Coping Scale, a scale grounded in theory and in the qualitative reports of nurses' coping strategies. Data from 201 nurses working in public and private hospitals revealed four reliable factors: appraisal, challenge/commitment, use of social resources and avoidance, which together explained 57% of the variance. The factor structure was cross-validated among university students. A second-order factor analysis revealed these factors loaded onto a latent variable labelled management of demands that was stable across genders. Three factors contributed positively to the management of demands, while avoidance contributed negatively. The negative contribution of avoidance suggests that emotion-based strategies are not effective in the management of demands. Further studies need to investigate the utility of these factors in mediating the impact of stressors on nurses' wellbeing.

INTRODUCTION

uch empirical research over the past 30 years has attempted to assess the strategies that people use to deal with stressful situations. Despite the plethora of coping scales in the literature (Ways of Coping Checklist-Revised, Vitaliano et al 1985; Defense Style Questionnaire, Bond et al 1983), empirical support for the construct validity of these scales is often lacking and, in many instances, the scales also lack a strong theoretical grounding.

This paper reports on the development and psychometric properties of a coping scale grounded in Pearlin and Schooler's (1978) theory of coping, as well as the factors identified in previous qualitative research (Kipping 1998; Trygstad 1986) as the strategies nurses use to deal with demands.

The factors derived from the current scale were validated for use among nurses and, through confirmation of the factor structure among university students it is suggested that the scale is also relevant for more general populations. The current factors are discussed in relation to existing theory and nursing practice.

The results of this study provide a theoretically relevant and psychometrically sound instrument for measuring both adaptive and maladaptive strategies used in response to workplace and other stressors. The identification and measurement of adaptive management styles is particularly important among nurses because it is not just their own wellbeing that may be at stake, but also that of their patients. This instrument will supplement previous qualitative reports of nurses' use of coping styles in the literature.

LITERATURE REVIEW

Pearlin and Schooler (1978) were among the first researchers to provide a theoretical overview of the components of effective coping, yet current operationalisations of coping have failed to address all of these components. According to Pearlin and Schooler, coping behaviour has a protective function that can be implemented in three ways: 1) coping strategies can eliminate or modify conditions giving rise to the problem; 2) the meaning of a problematic experience can be perceptually controlled in a manner that neutralises its character; or, 3) coping can act to keep the emotional consequences of problems within manageable bounds. Other theorists and the instruments evolved from their theories have addressed some but not all of these functions, and this deficit might explain why no comprehensive measure of coping has emerged.

Anna Freud (1966), for instance, described 'the ways and means by which the ego wards off ...anxiety, and exercises control over impulsive behaviour, affects and instinctive urges' (p.5) as defense mechanisms. Defense mechanisms are said to allow one to accept or cope with life's realities and the discharge of anxiety arising from these is seen as psychologically adaptive (Carr 1990; Raphael 1981). Thus, denial, repression, intellectualisation, humour and rationalisation are said to be normal and productive to the degree that they neutralise anxiety and allow a person to manage everyday life.

Bond et al (1983) developed the Defense Style Questionnaire (DSQ) to empirically evaluate and quantify people's use of these defense mechanisms.

Andrews et al (1989) subsequently reduced the DSQ to three secondary factors: mature (four first-order factors eg humour), neurotic (four first-order factors eg idealisation) and immature (12 first-order factors eg fantasy) defense mechanisms. Andrews et al (1989) found patients' differential use of these defense styles was clinically relevant in that they were associated with the patients' degree of psychopathology (ranging from phobias to obsessive-compulsive disorder) and the respective level of treatment difficulty of patients with these disorders. However, these factors have not been replicated among the general population (Spinhoven, van Gaalen and Abraham 1995).

Furthermore, the focus of these defense mechanisms, and hence the DSQ, has been - in Pearlin and Schooler's (1978) terms - limited to coping with anxiety and reducing the emotional consequences of problems. While the reduction of emotionality is important for wellbeing and may allow individuals to deal with their stress, the DSQ does not directly assess how people might alter the meaning they attach to their problems, or how people might eliminate or modify their problems.

Folkman and Lazarus (1980) addressed this latter issue in their conceptualisation of coping that they see is comprised of problem-based and emotion-focused strategies. They specifically argued that problem-based coping is directed towards solving the problem and that problem-based coping involves both behavioural and cognitive components such as 'standing my ground and

fighting for what I want' and 'making a plan of action and following it'. The emotion-focused strategies involve attempts to avoid (eg slept more than usual), reduce (eg tried to forget the whole thing) and suppress (eg refuse to believe it had happened) anxiety in ways that are not dissimilar to the ethos of the DSO. Both of these factors are addressed in their Ways of Coping Checklist (WOCC) but, like the DSO, it too fails to demonstrate a robust factor structure across samples (eg Bruchon-Schweitzer et al 1996; Edwards and Baglioni 1993; Spinhoven et al 1995). The WOCC also fails to assess the meaning that Pearlin and Schooler (1978) suggested people attach to their problems.

This lack of assessment of the personal meaning people attach to stressors is particularly surprising in light of Lazarus and Folkman's (1984) argument that people engage in an appraisal process in relation to potential and actual stressors. That is, a person asks 'What is the problem?' and 'Why is it a problem for me?', and it is only if the person decides that 'it is a problem for me' that he or she needs to engage coping mechanisms.

In this paper, coping is conceptualised not only as efforts to reduce emotionality and to find solutions to problems, but also as the ways in which people frame their experience so that their cognitive view reflects a sense of challenge and enhances the perception that the demands can be managed. It may be that this perceptual control, or reframing, as suggested by Pearlin and Schooler (1978), allows some people to see demands from a more positive perspective. In this way, it may be that some people, or most people at some time, see demands and problems as challenges to be met rather than as stressors to be dealt with or overcome.

The roles of coping described above, including those proposed by Pearlin and Schooler, have been independently endorsed in qualitative reports in the nursing literature. For instance, Trygstad et al (1986) reported that nurses interviewed by them cited a range of their own behaviours among the strategies they used most frequently in dealing with demands. These behaviours involved 'self-talk' relevant to nurses' perceptions, taking an active role, and talking to others. Similarly, Kipping (1998) identified social support and taking action to deal with the problem as the two strategies most frequently cited by psychiatric nurses to deal with their stressors. Nurses cited anxiety reduction techniques or emotion-focused coping strategies far less often. When mentioned, these emotion-focused strategies involved taking days off (avoidance) and joking with other staff (distraction/anxiety reduction).

It would seem, therefore, that Pearlin and Schooler's proposed strategies have received some empirical validation among nurses, albeit via qualitative data, but no instrument has been developed to empirically assess these domains. Another important strategy mentioned by

nurses in the Kipping (1998) study for dealing with demands was the use of personal resources, such as seeking advice or help from others. Social resources conceived in this manner might also be helpful in the resolution of issues and as such this support can be viewed in terms of a direct coping tool or strategy rather than simply as a support or a buffer against the subsequent effects of demands or stressors.

The aim of this study was to develop an instrument grounded in Pearlin and Schooler's (1978) theory of coping and supported by qualitative data, to assess these factors: appraisal, challenge/commitment, use of social resources, and the emotion focused strategy of avoidance. This instrument was then comprehensively validated using two separate samples: a sample of nurses and a sample of university students. The use of diverse samples is important during the psychometric assessment of an instrument, as instruments need to be robust across populations and contexts to enable meaningful future comparisons among groups and across situations. The psychometric properties of the scale were assessed via a series of statistical techniques, including principal components analysis, confirmatory factor analysis, and reliability analyses.

METHOD

Design

A series of questions was prepared to assess each of Pearlin and Schooler's three proposed coping strategies as well as the use of other people as a resource. After ensuring that there was no duplication and that the questions could all be answered on a five-point Likert format according to frequency of use (where 1=never and 5=always), 23 questions constituted the original instrument.

Participants

Two hundred and one nurses (87% female) participated in the study. Although there was a tendency for females to be older, there was no statistical difference in age between male (M=32.33 years, sd=7.51) and female (M=40.98 years, sd=8.95) respondents (t 1.58, p= 0.130). Seventyeight percent of nurses reported they worked full-time. The majority of respondents worked in operating theatres (35%), while others worked in surgical wards (13%), medical, psychiatry and education (each 9%), and ICU (5%). However, 21% of respondents either failed to answer this question or indicated more than one unit. The majority of nurses reported having a postgraduate qualification (64%), 9% of nurses without a postgraduate degree said they were currently studying for one, and 28% of nurses reported either not holding a postgraduate qualification or were currently studying for one.

Five hundred and fifty-one first year university students from Deakin University (407 females, 144

males) whose mean age was 19.37 years (sd=4.34, range 17–45) completed the questionnaire as part of a larger study related to the demands associated with commencing university. These students were studying for a range of degrees including nursing, psychology, sociology and arts. No data are available on the numbers in each course.

Measures

All respondents completed the 23-questions written to form the Deakin Coping Scale (DCS). Nurses were asked to answer the questions with respect to problems typically encountered on the wards, while students were asked to answer the questions in relation to any problems or demands they may have experienced when commencing university some two months earlier.

Procedure

Ethical approval for this study was obtained from Deakin University. This study was advertised to nurses in the Australian Nursing Federation Victorian Branch Newsletter and via course coordinators of graduate nursing programs throughout Victoria and New South Wales, Australia. Nurses interested in participating in the study either completed a Web-based questionnaire or contacted the researcher on the telephone number provided to receive a hardcopy of the instrument together with a plain language statement and a replypaid envelope.

First year university students wishing to gain research participation credits were required to participate in three of several studies advertised on university noticeboards. This study was advertised as 'an investigation of coping styles in relation to the demands associated with commencing university'. Students not wishing to engage in the research participation component were provided with an alternative way to achieve credit in that they could submit a previously nominated piece of work for assessment at pass/fail level. Students collected the questionnaire during scheduled classes, completed it in their own time, and returned it to the researcher via the internal university mail.

No response rates are available for either sample.

RESULTS

The data were analysed using SPSS/PC (Versions 6.1 and 9) and the structural equation modelling program, AMOS (Version 3.1) developed by Arbuckle (1997). The factor structure and internal reliability of the DCS items were investigated using principal components analysis (PCA) and Cronbach alpha (α) for the sample of nurses. A second-order factor, confirmatory factor analysis (CFA), was then used with the student sample to ascertain how the factors of the DCS contributed to the latent variable coping or, more specifically, the management of demands. A simultaneous CFA was conducted next to determine the robustness of the

DCS's factor structure across genders for the university group only.

Exploratory Factor Analysis

Principal components analysis with an oblique rotation was used to ascertain the factor structure of the DCS among the nurses. The Kaiser-Myer Olkin Measure of Sampling Adequacy (KMO) 0.740 and Bartlett's Test of Sphericity (x^2 =572.31, p<0.001) both indicated the factorability of the correlation matrix for the initial 23 questions. Principal components analysis revealed five factors with eigenvalues greater than one (Gorsuch 1983). However, Cattel's Scree Plot, Tabachnick and Fidell's (2001) criterion of choice, suggested the presence of four factors.

After successive extractions and the removal of four items, the final solution produced simple independent structure with a four-factor solution. These four factors

explained 57% of the variance and were labelled appraisal (seven items), use of social resources (four items), challenge/commitment (four items) and avoidance (four items). Each factor demonstrated adequate internal reliability (α =0.64 to 0.88) (Anastasi 1982). The factor structure, factor loadings, eigenvalues, per cent of variance explained and descriptive statistics are presented in Table 1.

Second-order confirmatory factor analysis (CFA)

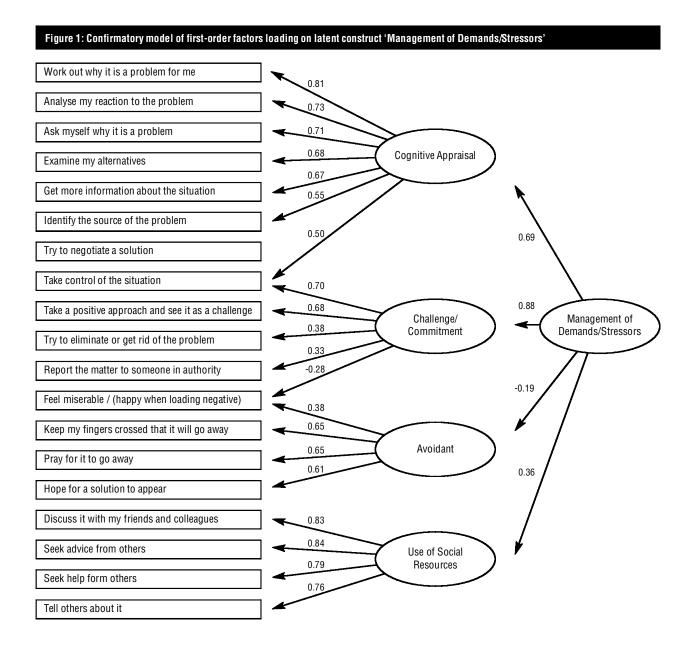
In order to cross-validate the factor structure and to ascertain how the factors of the DCS would contribute to a broader understanding of how people manage their demands, a second-order confirmatory factor analysis was conducted using the larger student sample. The first-order factors extracted from the sample of nurses were loaded onto a latent construct labelled 'management of demands/stressors' (see figure 1).

*	Question	Factor 1	Factor 2	Factor 3	Facto 4
16	Ask myself why it is a problem	0.86			
1	Work out why it is a problem for me	0.85			
9	Analyse my reaction to the problem	0.80			
5	Examine my alternatives	0.71			
13	Get more information about the situation	0.63			
8	Identify the source of the problem	0.54			
14	Try to negotiate a solution	0.41			
3	Discuss it with my friends and colleagues		0.90		
11	Seek advice from others		0.86		
6	Tell others about it		0.85		
17	Seek help from others		0.83		
10	Pray for it to go away			0.78	
15	Hope for a solution to appear			0.76	
18	Keep my fingers crossed that it will go away			0.76	
12	Take a positive approach and see it as a challenge				0.6
19	Try to eliminate or get rid of the problem				0.6
7	Feel miserable about the situation			0.39	-0.6
4	Take control of the situation				0.5
2	Report the matter to someone in authority				0.4
	Eigenvalue	4.98	2.57	2.04	1.2
	% variance explained	26.23	13.50	10.74	6.4
	Correlation matrix	1			
		0.24	1		
		-0.03	-0.06	1	
		0.33	0.22	-0.17	1
	M	24.70	13.61	10.73	15.4
	sd	5.02	3.40	3.21	2.8
	α	0.85	0.88	0.68	0.6

^{*} Questions have been renumbered to reflect the final 19-item questionnaire.

The Independence x^2 (171) 3752.19, p<0.001 confirmed the factorability of the matrix, and the data provided a good fit to the model (x^2 [147] 501.81, p<0.001, normed x^2 =3.41; goodness of fit 0.91; adjusted goodness of fit 0.88; incremental fit index 0.90; comparative fit index 0.90; root means squares approximation 0.06. In addition to these indices, the single-sample expected cross-validation index (ECVI) suggested by Browne and Cudeck (1989) was 1.05 (90% confidence intervals 0.93:1.17), indicating the potential stability of the model in further samples. An appraisal of the situation, utilisation of social resources and perceiving the situation as a challenge for which one has a sense of commitment all contributed to the successful management of demands. The use of avoidant strategies did not (see Figure 1).

In order to determine whether this second-order factor structure was valid across genders, a simultaneous confirmatory factor analysis for males and females was conducted to test for equivalence using the students' data. This test revealed that the same factor model held true in both genders (x^2 =666.01, p<0.001; normed x^2 =2.261; RMSEA 0.04, pclose=0.74). Having accepted that the same factor model prevailed across gender, Arbuckle's (1997) further recommendation to constrain the factor pattern (ie the regression weights) to test for equivalence of parameter estimates across samples was implemented. This comparison revealed no significant difference in parameter estimates across the samples of males and females (x^2 =691.01, p<0.001; normed x^2 =2.23; RMSEA 0.04, pclose=0.81), providing further support for the stability of the factor structure across gender.



DISCUSSION

The aim of the present study was to develop and psychometrically evaluate an instrument designed to assess how people cope with problems and demands upon them and to test the robustness of the factor structure in samples of nurses and students. The questions in the DCS were grounded in Pearlin and Schooler's (1978) theory of coping and qualitative reports of nurses' coping styles. The findings of this study, as well as providing good support for the empirical validity and reliability of the instrument, also attest to the merits of utilising both theory and qualitative data to produce an empirical scale.

Exploratory analysis of the initial 23-questions of the DCS in a sample of volunteer nurses working in a range of hospital wards yielded four factors: appraisal; challenge/commitment, use of social resources and avoidance, across 19 questions. All four factors exhibited satisfactory internal reliability and together explained 57% of the variance, which compares favourably to the 60% recommended by Hair et al (1995) as indicative of a sound scale.

Further support for the construct validity of these four factors is provided by the second-order CFA (Figure 1) conducted with data from a sample of university students. The CFA clearly indicates that the first-order factors (appraisal, challenge/commitment and use of social resources) are positive coping strategies which contribute to the management of demands, while avoidant strategies are negatively related to this second-order factor. This second-order factor structure was robust across genders.

The present findings add support to Pearlin and Schooler's (1978) conceptualisation of coping. These findings also contradict the proposition that problemfocused and emotion-focused strategies are both coping efforts; that is, that both 'consist of efforts ... to manage environmental and internal demands' (Lazarus and Launier 1978, p.311). The current model indicates that a strategy involving a sense of challenge/commitment aimed at controlling, solving or reducing demands, along with an appraisal of the demands (eg why is it a problem for me) and the seeking out and use of social resources, are coping efforts that contribute to the management of demands. Conversely, affective or emotion-based strategies, typified here by avoidance (eg hoped for a solution to appear, felt miserable about the situation), contribute negatively to the management of demands. This negative relationship might suggest that emotionbased reactions are not coping per se, but rather a reaction to the perceived demand or threat. In Pearlin and Schooler's study (1978), as well as in Freudian terms (see Anna Freud, 1966), these strategies may well be utilised to reduce or deal with the anxiety or distress experienced in relation to the stressor, but they do not contribute to solving the problem.

The current model (Figure 1) also shows that a challenge/commitment approach, operationalised by 'taking control of the situation', having a 'positive approach' and seeing the situation as 'challenging', is the strategy that contributes most to managing demands. This finding supports work based on the locus of control construct whereby people with an internal locus of control have been found to respond more adaptively to stress and its appraisal than those with an external locus (Krause and Stryker 1984; Parkes 1984; Perrewe 1987). A positive approach and the perception of demands as a challenge requiring commitment are also congruent with Kobasa's (1982) concept of hardiness to stress, which can be interpreted indirectly as the ability to manage demands.

The appraisal factor extracted from the Deakin Coping Scale contains elements of what Lazarus and Launier (1978) termed primary and secondary appraisal; that is, 'Why is it a problem for me?' and 'How can I negotiate a solution?' Clearly, such questions are important in individuals' determination of 'what' and 'if' situations are stressful. The use of available social resources, such as discussion with colleagues and seeking or taking advice and help from others, is also a necessary component of managing demands and problems given that stress, as a reaction, has been described by numerous authors as the discrepancy between perceived demands and perceived resources. The use of these strategies of appraisal and resources contribute to the management of demands.

The utilisation of these factors may be particularly important for the wellbeing of nurses working as part of a team where they may often be required to make important decisions. Nurses in particular, are often required to appraise demanding and/or stressful situations. If a problem does exist then they might well need to draw upon others as resources, and they need to perceive the situation as one of challenge to be overcome rather than a situation that is overwhelming. The use of avoidance strategies clearly will not be productive.

This instrument needs to be tested further among nurses in relation to a range of demanding situations, nurses' qualitative reports of how they see themselves as coping, and how the use of different coping styles contributes to subjective reports of health and wellbeing. The comparability of the factor structure of the DCS across nurses working in a range of wards needs to be confirmed in future studies employing larger samples.

CONCLUSION

The Deakin Coping Scale contains four factors that are theoretically relevant and psychometrically sound. The positive factors have been labelled an appraisal process (eg 'work out why it is a problem for me'), a utilisation of social resources (eg 'consulting with

others') and adopting a challenge/commitment approach to deal with the issue (eg 'take control of the situation'). Considered together, these factors contribute to one's ability to decrease threats and to manage demands. The use of avoidance strategies contributes negatively to the management of demands and is therefore inconsistent with the concept of emotion as a coping strategy. Further research is required to ascertain the mediating effect of these coping strategies between stressors and nurses' health and job satisfaction.

REFERENCES

Anastasi, A. 1982. *Psychological testing*. 5th edn. New York: Macmillan Publishing.

Andrews, G., Pollock, C. and Stewart, G. 1989. The determination of defense style by questionnaire. *Archives of General Psychiatry*. 46:455-450.

Arbuckle, J.L. 1997. Amos users' guide version 3.6. Chicago: Smallwaters Corp.

Bond, M.D., Gardner, S.T., Christian, J. and Siegel, J.J. 1983. Empirical study of self-rated defense styles. *Archives of General Psychiatry*. 40:333-338.

Brown, M.W. and Cudeck, R. 1989. Single sample cross-validation indices for covariance structures. *Multivariate Behavioral Research*. 24:445-455.

Browne, M.W. and Cudeck, R. 1993. Alternative ways of assessing model fit, in Bollen K.S. and Long J.S. (eds.). *Testing structural equation models*. Newbury Park: Sage: 136-162.

Bruchon-Schweitzer, M., Cousson, F., Quintard, B. and Nuissier, J. 1996. French adaptation of the ways of coping checklist. *Perceptual and Motor-Skills*, 83:104-106.

Carr, V.H. 1990. Managing the psychosocial responses of the transplant patient, in Sigardson-Poor K.M. and Haggerty R.M. (eds). *Nursing care of the transplant recipient*. London: W.B. Saunders: 53-87.

Edwards, J.R. and Baglioni, A.J. 1993. The measurement of coping with stress: Construct validity of the ways of coping checklist and the cybernetic coping scale. *Work and Stress*, 7:17-31.

Folkman, S. and Lazarus, R.S. 1980. An analysis of coping in a middle-aged community sample. *Journal of Health and Social Behavior*. 21:219-239.

Freud, A. 1966. The ego and the mechanisms of defense. New York: International Universities Press.

Gorsuch, R.L. 1983. Factor analysis. 2nd edn. New Jersey: Lawrence Erlbaum Associates.

Hair, J.F. Jr., Anderson, R.E., Tatham, R.L. and Black, W.C. 1995. *Multivariate data analysis*. 4th edn. New Jersey: Prentice Hall.

Kipping, C. 1998. Mental health nurses' strategies for coping with stress. Mental Health Nursing. 16(3):18-22.

Kobasa, S.C. 1982. The hardy personality: Toward a social psychology of stress and health, in Sanders G.S. and Suls, J. (eds). *Social psychology of health and illness*, Hillsdale. NJ: Erlbaum:3-32.

Krause, N. and Stryker, S. 1984. Stress and well-being: The buffering role of locus of control beliefs. *Social Science and Medicine*. 18:783-790.

Lazarus, R.S. and Folkman, S. 1984. Stress, appraisal, and coping. New York: Springer.

Lazarus, R.S. and Launier, R. 1978. Stress-related transactions between person and environment, in Pervin, L.A. and Lewis, M. (eds). *Internal and external determinants of behavior*. New York: Plenum.

Parkes, K.R. 1984. Locus of control, cognitive appraisal, and coping in stressful episodes. *Journal of personality and social psychology*, 46:655-68.

Pearlin, L.I. and Schooler, C. 1978. The construct of coping. *Journal of health and social behavior*, 19:2-21.

Perrewe, P.L. 1987. The moderating effects of activity level and locus of control in the personal control-job stress relationship. *International journal of psychology*, 22:179-93.

Raphael, B. 1981. Personal disaster. Australian and New Zealand journal of psychiatry. 15:183-98.

Tabachnick, B.G. and Fidell, L.S. 2001. *Using multivariate statistics*. 4th ed. Needham Heights: Allyn and Bacon.

Trystad, L.N. 1986. Stress and coping. *Journal of psychosocial nursing*. 24(10):23-27.

Wheaton, B. Muthen, B., Alwin, D.F. and Summers, G.F. 1977. Assessing reliability and stability in panel models, in Heise, D.R. (ed). *Sociological methodology*. San Francisco: Jossey Bass. 84-136.

APPENDIX A: Deakin Coping Scale

The following questions ask about how you deal with demands or problems (specify situation or leave open). Please answer every question by circling how much you engage in each of these techniques.

		Never	Rarely	Sometimes	Often	Always
1	Work out why it is a problem for me	1	2	3	4	5
2	Report the matter to someone in authority	1	2	3	4	5
3	Discuss it with my friends and colleagues	1	2	3	4	5
4	Take control of the situation	1	2	3	4	5
5	Examine my alternatives	1	2	3	4	5
6	Tell others about it	1	2	3	4	5
7	Feel miserable about the situation	1	2	3	4	5
8	Identify the source of the problem	1	2	3	4	5
9	Analyse my reaction to the problem	1	2	3	4	5
10	Pray for it to go away	1	2	3	4	5
11	Seek advice from others	1	2	3	4	5
12	Take a positive approach and see it as a challenge	1	2	3	4	5
13	Get more information about the situation	1	2	3	4	5
14	Try to negotiate a solution	1	2	3	4	5
15	Hope for a solution to appear	1	2	3	4	5
16	Ask myself why it is a problem	1	2	3	4	5
17	Seek help from others	1	2	3	4	5
18	Keep my fingers crossed that it will go away	1	2	3	4	5
19	Try to eliminate or get rid of the problem	1	2	3	4	5