

SAFETY SCIENCE

M o n i t o r



Safety in Action

25-28 February 1998

Special Edition

1999

Philosophy of Safety

Article 5

VOL 3

PATTERNS OF RISK BEHAVIOUR AMONG ADOLESCENTS: THE ROLE OF SELF-EFFICACY AND OPTIMISM

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INTRODUCTION

Since patterns of risk behaviour appear to be established early in life, a focus on adolescent risk behaviours seem highly warranted with respect to potential for health promotion. Psychological research on explanation and prediction of risk behaviour has become a field of great interest for both practitioners and researchers. A number of theoretical approaches have been used in the successful prediction of various types of health behaviours from a number of different areas. As to the conceptualisation of the dependent variable to be predicted, the majority of previous studies have focused on specific behaviours such as drunk driving, seat belt use and driving violations. Although representing important contributions to the understanding of factors involved in generating behaviours, these findings are to some extent limited to narrow and specific behavioural tendencies.

At the same time, a number of specific risk behaviours have been shown to be interrelated in a systematic fashion. Several studies, applying exploratory and confirmatory factor analysis, have shown that a number of general health-related behaviours can be conceptualised as reflective of a few basic dimensions, such as health compromising and health enhancing behaviour. Such dimensions are conceived of as reflecting general behavioural dispositions, manifested in rather coherent patterns of behaviour. In a recent study, conducted at the National Institute of Public Health in Norway, it was shown that risk behaviours are embedded in a more general structure of health-related behaviours, and that a hierarchical model comprising first-, second- and third-order factors was able to account for the interrelations between the specific behaviours. At the second-order level, three factors were identified, namely High Action, Protection and Addiction.

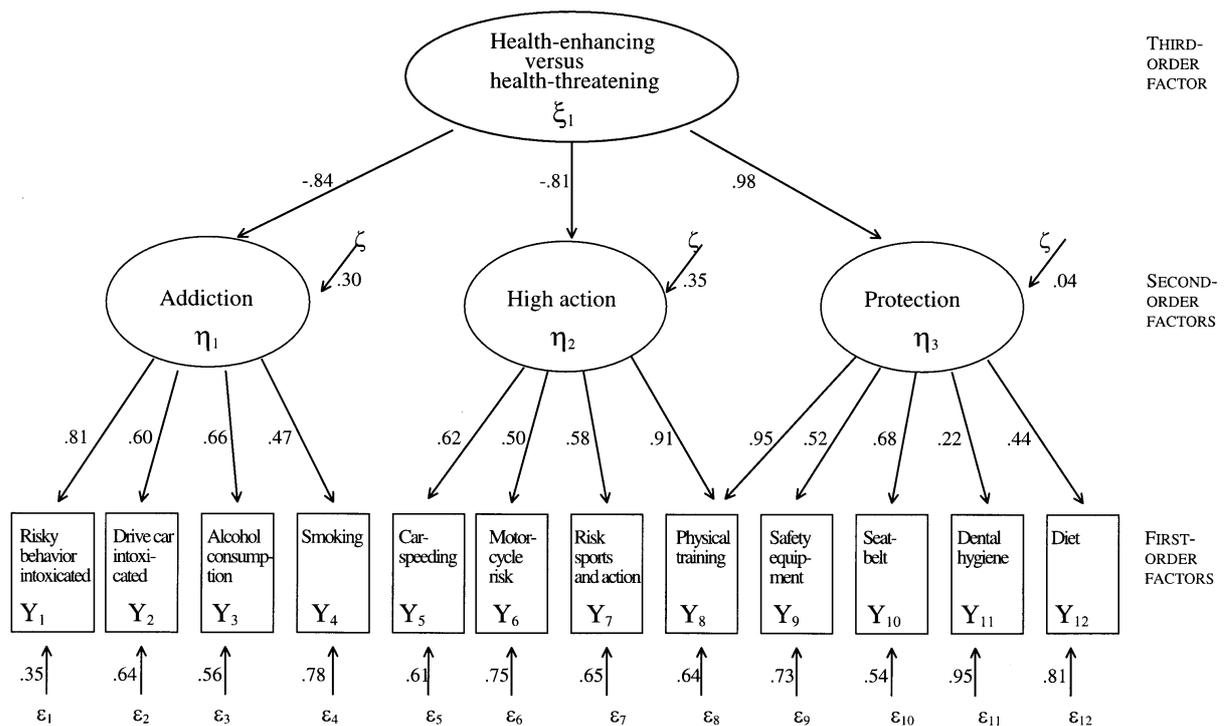


Figure 1 Third-order factor model of underlying dimensionality in health-related behaviour.
(From Røysamb et al., 1997, *Psychology and Health*)

However, limited attention has been paid to the psychological correlates and predictors of such general behavioural patterns. The present study set out to investigate the role of general control and outcome expectancy dispositions. More specifically the project focuses on dispositional optimism and self-efficacy as potential predictors of the three general behaviour patterns just described.

Dispositional optimism is theoretically defined as an inclination to expect favourable life outcomes and has been found to be related to self-rated health and health maintenance behaviours. The effect upon health behaviours and health is assumed to operate through the better adjustment and coping styles of optimists in important life transitions. Optimists are presumably more persistent than are pessimists when engaging in behaviours towards a certain goal, such as good health.

Self-efficacy is a theoretically related construct, differing however, in terms of reference to personal agency and object of expectancy. Whereas optimism refers to positive outcome expectancies, regardless of source, self-efficacy refers to positive expectancies regarding behaviour performance due to own effort. The original conceptualisation of self-efficacy was context specific, but recently the notion of generalised self-efficacy has been advocated. A strong sense of self-efficacy is related to health behaviours such as dental hygiene, breast examination and controlled drinking, and to better health in general. However, previous research has exclusively focused on how self-efficacy predicts positive health behaviours, thereby neglecting the question of whether high self-efficacy in some cases also can be canalized towards risky behaviour. Recognising that people with high self-efficacy choose to perform more challenging tasks it appears slightly contradictory that high self-efficacy could not lead to unreasonable risk taking. Rather, given that some risk behaviours are perceived as challenging to some individuals, it appears reasonable to expect some people to direct their self-efficacy towards performance of such behaviour. In order to empirically address this issue, the present study applies two new measures of risk related efficacy, that is, risk avoidance efficacy and risk handling efficacy. It was hypothesised that the two risk efficacy constructs both would be positively related to generalised self-efficacy, but that the two would have opposite effects upon behaviour. That is, risk avoidance efficacy was hypothesised to predict health promoting behaviour, whereas risk handling efficacy was hypothesised to predict health threatening behaviour. These hypotheses are particularly relevant because the study focuses on adolescents. Risk taking might be an integral part of the development of competence and identity among adolescents, thus in this age group it might be highly pertinent to address the issue of self-efficacy as canalized towards risky behaviour.

In order to summarise, the aim of the study was twofold. First, one objective was to investigate to what extent dispositional optimism and generalised self-efficacy are related to the behaviour patterns of High-Action, Protection and Addiction, and whether the two constructs retained significant effects when controlling for the other. The second objective involves the notion of self-efficacy as potentially canalized towards risk behaviour, hypothesising that the effect of generalised self-efficacy is mediated through both risk avoidance and risk handling efficacy, which are expected to reveal opposite effects upon behaviour.

METHODS

Data were collected by questionnaire in Western Norway, among 18 year olds. A total of 1583 adolescents participated, yielding a response rate of 63%. An attrition study by telephone was conducted to investigate whether the non-respondents differed systematically from the respondents, and a retest, among 93 respondents, was conducted after seven weeks, to examine the temporal stability of the measures.

Variables

A total of 33 behavioural items were measured, generally on four-point scales from (1) never/none to (4) many times, and five-point scales from (1) never to (5) always:

- *High action behaviour* (Røysamb, Rise & Kraft, 1997)
 - Ten items, measuring behaviours such as car-speeding, reckless skiing, risk sports
- *Addiction behaviour* (Røysamb, Rise & Kraft, 1997)
 - Twelve items, measuring behaviours such as drunk driving, drunk bicycling, general drinking
- *Protection behaviour* (Røysamb, Rise & Kraft, 1997)
 - Eleven items, measuring behaviours such as seat-belt use, life jacket use, reflector use
- *Dispositional optimism* (LOT: Scheier & Carver, 1985)
 - Eight items using the Life Orientation Test
- *Generalised self-efficacy* (Schwarzer, 1993)
 - Ten items
- *Risk handling efficacy* (developed in present project)
- *Risk avoidance efficacy* (developed in present project)

Table 1 shows the items of the two scales.

Table 1

Items of the risk handling efficacy (RHE) scale

- "When unforeseen dangerous situations occur, I'm able to handle them"
- "I keep my head cool in every unforeseen risky situation"
- "I would be overwhelmed by fear if I ended up in an unexpected and very dangerous situation" (reverse scoring)
- "In an unexpected dangerous situation I wouldn't know what to do" (reverse scoring)

Items of the risk avoidance efficacy (RAE) scale

- "It is easy for me to stay away from dangerous situations"
- "I believe I manage to live a safe and secure life"
- "I am able to put myself together so that I don't end up in dangerous situations"
- "I believe I manage to avoid unexpected dangerous situations"

Items are responded to on a four-point scale, comprising the following option
 Not correct (1) - Slightly correct (2) - Quite correct (3) - Absolutely correct (4)

RESULTS

Turning now to the results, table 2 depicts descriptive and psychometric information concerning the involved measures.

Table 2 Descriptive and psychometric statistics

	Mean scores	Sd	α	Test-retest reliability
Addiction behaviour _(z-score items)	0	.61	.82	.86
Protection behaviour _(z-score items)	0	.50	.70	.81
High-action behaviour _(z-score items)	0	.52	.75	.89
Dispositional optimism (LOT)	27.5	4.64	.72	.74
Generalised self-efficacy	24.2	5.70	.88	.82
Risk handling efficacy	10.5	2.20	.61	.64
Risk avoidance efficacy	9.5	2.56	.76	.50

Next, table 3 shows bivariate correlations between all predictor variables and the three behaviour indices.

Table 3 Bivariate correlations

	High Action	Addic- tion	Protec- tion	1	2	3
1. LOT	.04	-.11*	.20*			
2. GSE	.20*	.08*	.00	.35*		
3. RAE	-.10*	-.14*	.15*	.11*	.34*	
4. RHE	.24*	.07*	-.04	.24*	.58*	.24*

* $p < 0.01$

LOT=Life Orientation Test; GSE=Generalised Self-efficacy;
RAE=Risk Avoidance Efficacy; RHE=Risk Handling Efficacy

Optimism and self-efficacy measures were positively interrelated, but correlations were only weak to moderate. Thus, this divergent validity is indicative of the distinctiveness of each scale. Regarding the relations between the predictor variables and the behavioural measures, as anticipated they were in general modest, but significant for most predictor variables. Moreover, the relations with the predictor variables varied between the three behavioural measures, thus being indicative of the divergent validity of the latter measures. Of particular interest is the finding that whereas optimism was positively related to risk reducing or protection behaviour, generalised self-efficacy was positively related to risky behaviours. Furthermore, it should be noted that, as hypothesised, whereas both risk avoidance and risk handling efficacy were positively related to generalised self-efficacy, they were conversely related to behaviour. Risk avoidance efficacy was positively related to health enhancing behaviour and negatively related to health threatening behaviour, whereas risk handling efficacy was positively related to health threatening behaviour.

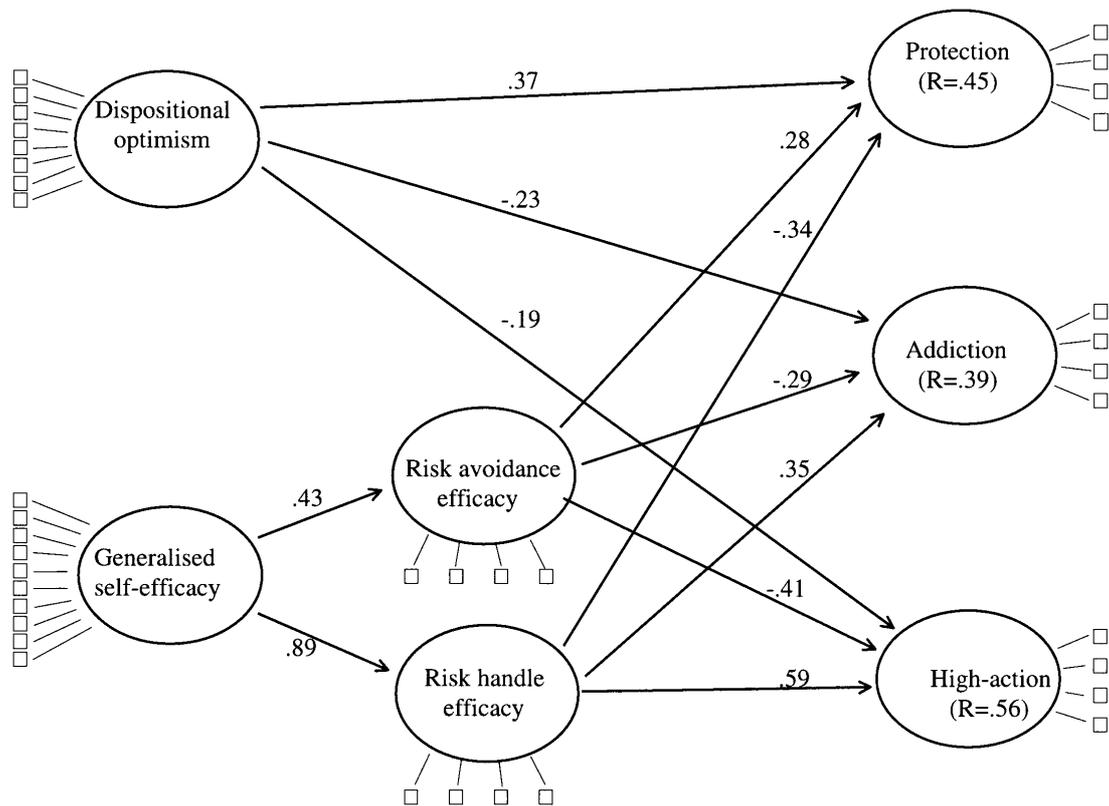


Figure 2 LISREL model showing regression coefficients and Multiple Rs. Only significant ($p < 0.01$) paths included. $\chi^2 = 3165.4$; d.f. = 650; RMSEA = 0.050; RMR = 0.055; AGFI = 0.88, Critical N = 367

The next step of analysis involved the testing of a model, applying LISREL 8, in which the risk specific efficacy measures were integrated with the optimism and generalised self-efficacy constructs. The model involved the notion of mediation of generalised self-efficacy through the two specific risk-related efficacy constructs. A full LISREL model was tested, that is, a model simultaneously involving measurement models and structural relations. Structural regression coefficients and multiple Rs for the behaviour patterns are shown. Acceptable fit measures were obtained.

Significant paths to the three behaviour patterns were identified both from optimism and the risk-related efficacies. Moreover, in order to further test the viability of the mediation model, the model was modified by allowing for direct effects from generalised self-efficacy upon behaviour. However, no significant direct paths were found, and the fit of the entire model did not improve, thus implying further support for the mediational hypothesis.

CONCLUSION

A few words of caution are warranted. Since the findings are based on self-reports collected in a cross-sectional design, some obvious limitations are involved, perhaps the most important of which is the issue of causality. Only future studies will be able to provide additional support - or lack of such - for our model and findings. With these limitations in mind, a few strengths of the study should also be acknowledged. First, findings are based on a relatively large and representative sample of adolescents. Second, by means of structural equation modelling - which eliminates random measurement errors - it was shown that several relations were not only significant but also substantial.

So to finally summarise the findings. First, it was shown that the self-efficacy and optimism are related to three general patterns of risk-related behaviour. Although self-efficacy and optimism are theoretically related the findings supported their divergent validity. Both constructs yielded unique contributions to explaining variance in the behaviour patterns studied.

Regarding the second main address of the study, the role of generalised and risk related efficacy beliefs, and the issue of positive versus negative effects, the results appear to support the general hypothesis. That is, the impact of generalised self-efficacy upon health behaviour can be construed as mediated through more specific efficacies, and these efficacies can be canalized both towards risk avoidance and risk taking. As noted earlier, previous research appear to focus exclusively on the effect of self-efficacy upon health promoting behaviour, implying that only such behaviours comprise subjectively desirable goals. Recognising that some individuals might perceive risk mastery as a highly desirable outcome, it should be no surprise that they direct their high self-efficacy towards this goal. In fact, the present findings suggest that for adolescents a high degree of generalised self-efficacy tends more often to be directed towards risky behaviour than towards protective behaviour. Although contrary to the original assumption that generalised self-efficacy will produce positive health behaviour, the finding is particularly interesting because it might point towards a psychological process which is specific for adolescents as a group. It is perfectly possible that adolescents and adults tend to canalize their generalised self-efficacy in different directions, yielding different predictions for health and risk behaviour for the two groups.

With regard to preventive efforts these findings suggest the notion of re-canalizing self-efficacy from health threatening behaviour to positive health behaviours. Thus, we strongly suggest that further studies should address the issue of different directions in which self-efficacy can be canalized, and that preventive efforts also should consider ways to re-canalize self-efficacy from risk handling efforts to risk avoidance efforts. In this matter, individual and cultural value systems might prove to be central ingredients that need increased attention.

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