



Self-Efficacy: Addressing Behavioural Attitudes Towards Risky Behaviour - An International Literature Review

Final Report

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1.0 Introduction and aims

The present report summarizes the work of the cross-frontier group which was established, within the framework of Interreg IV, to consider the concept of self-efficacy. A first full-scale study entitled "Let's Talk/Parlez-moi d'amour" had already been undertaken, under the aegis of the Interreg III programme, by several of the partners involved, to examine perceptions in Kent and the Somme of teenage pregnancy as a social phenomenon. This initial project was concluded in 2007 by a conference in Amiens, Somme, during which the French and English research groups were able to present and discuss their findings.

'Let's Talk' compared findings from research with young people in the Kent region of the UK with those of young people in the Somme region of France. The two regions were paired because they share many socio-economic and demographic characteristics. One of the key findings of 'Let's Talk' was that a significant proportion of young British people articulated low levels of self-belief in their ability to control their risk-taking behaviour, their control over external events and a negative orientation towards the future. This seemed to be associated with young people's negative experiences of education and the local environment, their sense of future prospects being limited and a negative opinion of other young people's behaviour. These UK findings seemed to be in contrast to the Somme population of young people, whose reported risk-taking behaviour was less and where moral values and a positive orientation towards their education, environment and future were stronger behavioural drivers. When the 'Let's Talk' researchers sought to theorise the findings of the study, the theory of 'self-efficacy' seemed to be the closest academic approach to capturing this outlook in which young people portrayed a contrasting and variable belief in their ability to be 'efficacious' or to feel that they could exert control over their lives.

One of the key ideas which had emerged from the Let's Talk project was the wish to develop cross-frontier co-operation, but this time from a more theoretical perspective. It had seemed clear that interventions by health or social professionals often lacked an adequate theoretical underpinning, and that this lack of theoretical support might pose problems for professionals. The research groups therefore decided to explore different approaches to intervention, which might be favourable to the achievement of the public health objectives pursued by public policy in their respective countries.

This report describes the consequent research collaboration, 'Self-Efficacy: Addressing Behavioural Attitudes Towards Risky Behaviour – An International Literature Review'. At the heart of the project was a literature review, undertaken over the course of one year, from mid-2009 to mid-2010. The English and French research groups, working from research parameters agreed in advance, analysed the results of twin searches of publications in French and English describing health interventions, and referring to the self-efficacy concept. The project then proceeded to a second stage, undertaken in September 2010, the object of which was to discuss the findings of the literature review with an audience of practitioners, decision-makers and academics. A workshop was organized which brought together around 30 people from France and the UK. Held over a half-day in Canterbury, this event enabled conclusions to be drawn concerning the possibilities and drawbacks of using the self-efficacy concept in the field of health education. The key findings from the workshop inform the conclusions and recommendations of this report.

2. Literature Review

The development of the self-efficacy concept is most commonly associated with the work of American psychologist Albert Bandura. The literature review was therefore undertaken to explore the ways in which researchers and practitioners have employed the concept of self-efficacy to influence young people's behaviour and outlook, in particular, with regard to behaviour deemed 'risky', associated with sex, drugs and alcohol. The review was concerned with interventions at all levels: primary (health promotion); secondary (early detection and intervention) and tertiary (reducing the impact of disadvantageous environments and promoting quality of life). It was the intention of this literature review to explore whether there are insights within this area of research that might be applicable to the design of future interventions seeking to improve young people's capacities to make less risky choices. The aim was to establish elements of best practice, such as the most effective site for interventions, the most effective facilitators of interventions, the timing and content of interventions and suggestions of how studies conducted in other national contexts might be adapted for use in the UK and France.

2.1 Background: The Theory of Self-efficacy

The psychological concept of 'self-efficacy' originates in the social cognitive theory of Albert Bandura (Bandura, 1977). Social cognitive theory has its roots in social psychology and behaviourism, but emphasises 'social learning', thereby situating the individual within a social context and within social relationships. Bandura developed a multi-dimensional model of the relationship between human cognition, environmental influences and human behaviour, called 'reciprocal determinism'. Rather than the individual being constructed as determined by either their environment or their biology, Bandura's tripartite model sought to appreciate the interplay between a) individual cognition, affect and biology, b) behaviour and c) the environment. Individual behaviour is understood not as directly determined by social or environmental influences but as crucially mediated through the individual's knowledge, understanding, emotions, perceptions and interpretations. Self-efficacy is one of the concepts used to describe this mediation between social experience, individual thinking and behaviour. Bandura claims that self-efficacy is a fundamental cognitive mechanism which underpins many aspects of human behaviour. The core tenet of Bandura's theory can be summed up as, 'what people think, believe, and feel affects how they behave' (Bandura 1986: 25).

Although self-efficacy primarily resides at the level of self-beliefs, it is also intrinsically related to action and behaviour. This is where it differs from 'self-esteem', which would seem to be a more passive concept, without a necessary relationship to action. Whereas self-esteem is the individual's judgement of self-worth, efficacy is the individual's judgement of their capacity to act and exert agency.

Bandura's early work created a model for the influence of self-efficacy beliefs on the ability of therapeutic interventions to change the behaviour of phobics, but later it expanded to become a generalized theory of human behaviour, with a theoretical model of self-efficacy development and the exercise of self-efficacy over

the life-span. The Bandura school of thought has expanded into many areas and now produces information material, products and interventions designed for the dissemination of practices to increase self-efficacy. Self-efficacy has been developed and applied most vigorously within the fields of health psychology, where it is understood as a key mediator in health behaviour change, and educational psychology, where it is used to understand 'human motivation, learning, self-regulation and accomplishment' (Pajares 2005, ix). Self-efficacy scales have been developed for use with children, parents, health professionals and teachers to deal with amongst many other things, the regulation of eating habits, pain management, condom use, drug resistance and problem solving.

The generalizing of self-efficacy as a core mechanism in human cognition and behaviour rests on claims to the,

'predictive generality of efficacy beliefs as significant contributions to the quality of human functioning.' (Benight and Bandura 2004)

In other words, levels of self-efficacy are said to be measurable and capable of predicting particular behavioural outcomes, for example, whether an individual uses a condom or complies with a medical treatment regime.

Sources of self-efficacy

In the Bandura model, self-efficacy is said to develop through four sources:

1. Mastery experiences

These are said to be the most effective sources of increased self-efficacy and are defined as 'the experience of overcoming obstacles through perseverant effort'.

2. Vicarious experiences (modelling)

These are provided by social models and entail 'seeing people similar to oneself succeed by sustained effort'. The effect of such modelling is strongly influenced by perceived similarity to the models. Models provide a social standard, transmit knowledge and teach skills. In contrast to some of the claims made for the positive impact of raising self-esteem, self-efficacy models claim that positive appraisals have limited impact; instead, situations need to be structured in such a way that the individual can experience success (defined as self-improvement).

3. Social persuasions

These can be characterized as verbal persuasion to overcome self-doubt. Negative persuasions which decrease self-efficacy are more influential than positive ones.

4. Somatic and emotional states/Physical factors

A person's perception of their physical responses (stress, arousal, depression, mood) to threatening environments and situations influences their self-efficacy beliefs.

How self-efficacy influences human functioning

According to Bandura, self-efficacy beliefs produce effects through four processes with outcomes for human functioning:

1. Cognitive processes.

Because 'much human behaviour, being purposive, is regulated by forethought embodying valued goals' 'personal goal-setting is influenced by self-appraisal of capabilities' (Bandura, 1994). This means that self-efficacy influences the choices people make to take on particular tasks, for example, by affecting the goals people set for themselves, whether people view future scenarios positively or negatively, whether they can function analytically under pressure.

2. Motivational processes

Because 'most human motivation is cognitively generated' self-efficacy affects how much effort someone puts into a task and how well they sustain that effort. Self-efficacy influences what people think is possible, whether they attribute failure/success to their own efforts or to 'natural' ability and the readjustment of goals based on progress. It will also affect how resilient people are to failure.

3. Affective processes

Non-cognitive, physiological responses are also affected by self-efficacy. For example, anxiety, stress, arousal or depression are subjectively determined by the individual's perceived self-efficacy in dealing with threat rather than directly reflective of the level of threat itself.

4. Selection processes

Self-efficacy influences the choices people make, which, in interaction with their environment can determine their life course beyond the decisional moment, for example, career choices.

Self-efficacy and young people

Beyond infancy, where innate agency interacts with parental and familial influences to shape the development of self-efficacy, the child's self-efficacy is broadened through peer influences. Peer relationships are very important in this model, and play a crucial role in the child's developing self-knowledge. Comparing themselves with their peers shapes, and is shaped by children's perceived self-efficacy. Children with low self-efficacy can become socially withdrawn but also, children with high self-efficacy may also socially alienate themselves, for example, through aggressive behaviour. Once the child starts school, teachers, fellow children and the general school culture all impact on the development of cognitive and academic self-efficacy. Through adolescence, risky behaviour experimentation is part of the process of development and most adolescents negotiate this transition successfully. For those with pre-existing low self-efficacy, the new demands of adolescence can cause problems. For those in impoverished environments, there is the added difficulty of finding positive life paths.

The concept has been developed primarily within cognitive psychology but has been used in the fields of management science and organizational behaviour, sport (Moritz, Feltz et al. 2000), health (in particular health-behaviour change (Wulfert and Wan 1993), managing chronic illness, addiction (Hyde, Hankins et al. 2008), phobias, education and trauma. Self-efficacy is most clearly defined within social cognitive theory, but it also occurs in other theories of health behaviour change. In the Theory of Planned Behaviour, self-efficacy is used almost synonymously with the construct 'perceived behavioural control'.

'to achieve self-directed change, people not only need reasons to alter risky habits, but they also must believe in their ability, or efficacy, to exercise personal control.' (Longmore, 2003:46).

In the transtheoretical model, self-efficacy is closely related to 'perceived outcomes' whereas in the Health Action Process Approach, it is theorised as operating in conjunction with outcome expectancies (Schwarzer and Luszczynska, 2005).

Self-efficacy is considered to be malleable and therefore could be affected negatively or positively by interventions, unlike demographic characteristics which although significant in shaping health behaviour, may be less susceptible to change through health-promotion programmes. Where self-efficacy is used as a core concept in interventions, it is theorised that interventions aiming to change health behaviour have a greater likelihood of success if they target self-efficacy as well as improving knowledge. A question arises regarding whether targeting self-efficacy is simply a pragmatic substitute for tackling more intractable social problems and provides an apparently measurable positive outcome in the absence of robust evidence of actual behaviour change.

2.2 Methods

This section describes the search strategy, including the search terms used, the databases searched, the criteria used to include or exclude studies and the method of analysis.

2.2.1 Search terms

The review of self-efficacy literature was based on the use of descriptors employed in listed databases. The first descriptors or keywords employed were narrowly restricted: self-efficacy, perceived self-efficacy AND child, adolescent, young people. These proved to be straightforward in the Anglophone context, but more complicated for French colleagues: the French term *efficacité* covers the senses of 'efficacy', 'efficiency' and indeed 'effectiveness' in English, and therefore coding for keywords on francophone databases is skewed by this ambiguity when self-efficacy is translated by *efficacité personnelle*. Related keywords such as *estime de soi* (self-esteem) were used to restrict search limits to the relevant factors.

A question also arose over whether to include interventions which although not using the concept of self-efficacy, used terms which were clearly very similar concepts, such as resistance skills, resilience skills, perceived behavioural control, personal and social skills, life skills training, competence enhancement, self-

management, information-motivation-behavioural skills. Due to constraints of time and resources, it was decided to acknowledge these parallel concepts in this report but not to search for these criteria.

2.2.2 Databases searched

The search was designed to be as wide as possible, incorporating peer-reviewed journals, review databases, web-based reports and books. For the Kent search, the electronic databases of PsycINFO abstracts, EBSCO host, MEDLINE, SCOPUS and COCHRANE were searched and Google Scholar was used to expand the search to a broader range of academic disciplines and produce possible further databases. The French researchers searched Medline, Pubmed, BDSP, ScienceDirect, Popline and Persée. The results were restricted to those after 1988. References were followed up to provide further studies.

2.2.3 Inclusion criteria

For inclusion in the review, studies had to feature the term 'Self-Efficacy' (or a Francophone equivalent) at least once in the title, abstract or full text (not just in the references). Although the age-range for the search was 5-18 years, some studies emerged in which the age of the sample extended into the early 20s. Studies of this type were included provided they were primarily focused on adolescents. Interventions in varied settings (e.g. schools, communities, health clinics) were included and from various countries, provided the results were written up in English or French.

Studies had to report an intervention in which self-efficacy was either explicitly targeted or in which self-efficacy was a significant outcome measure. Studies also had to fit the criteria of addressing 'risky-behaviour', primarily relating to sex (STIs, HIV and pregnancy), illegal drugs, alcohol consumption or smoking. A number of studies emerged which reported interventions to improve treatment compliance in adolescents diagnosed with particular diseases, but these were excluded on the basis that they were not generalisable to a wider adolescent population. There was a discussion amongst the French and British partners about whether studies reporting interventions to address physical activity and diet should be included in the review on the basis that they were addressing 'risky' behaviours, in this case, the risk of obesity and to cardio-vascular fitness. It was decided that the French colleagues would include these studies in their analysis to boost the size of their sample but that the British would include only those studies found in the initial search and not search for more, as their search had produced a greater number of relevant items using the core search terms.

There was also a discussion about whether to include studies where self-efficacy was not explicitly targeted but where it was used as one of many outcome measures, packaged within a broader theory. We decided to acknowledge the use of self-efficacy in this context, but not to include studies where self-efficacy is mentioned merely as one of very many outcome measures. To fulfil the inclusion criteria, self-efficacy had to be a more central and explicit component of the intervention, however, due to the small number studies found to fit this criteria, we have included others in which self-efficacy was one of many outcome measures, but in which it was also discussed as a concept at other points in the report.

Because of the nature of the self-efficacy concept as a hypothesised predictor of behaviour, many studies measured only attitudinal outcomes. A further discussion was necessary about whether to include interventions in which attitudinal, but not behavioural outcomes were measured. In their review of school-based drug interventions for the Cochrane collaboration, Faggiano et al (2009) conclude that, 'given the theoretical weakness of the model of causation, studies addressing only mediating variables must be rejected.' (2009: 31). We decided to include such studies, but were cautious when evaluating authors' claims to potential behavioural outcomes when these were not evaluated or proven.

2.2.4 Analysis framework

a) Analytical inventory

The literature was analysed in a simple spreadsheet, agreed and used online by both parties, using the following categories: Year; Country of intervention; Aims of the study; Sample; Theoretical approach; Risk type; Intervention; Place of intervention; Person delivering intervention; Use of self-efficacy; Research design; Instruments; Analysis framework; Results; Limitations. The inventory can be requested from the Health and Europe Centre (www.healthandeuropecentre.nhs.net)

b) Thematic analysis

Due to the variety in the type, scale, robustness and level of detail reported of the interventions and the inconsistency in the way the concept of self-efficacy was employed, making evaluations of individual studies and comparisons across the sample was difficult. The sample was therefore also analysed in a more thematic fashion to explore in more depth the way in which self-efficacy is used as a concept, the claims made for it and the types of problems it has been used to address. Thematic categories were:

- (i) Type of risk addressed
- (ii) Intervention setting
- (iii) Country of intervention
- (iv) Use of self-efficacy – general or specific
- (v) Type of specific self-efficacy addressed
- (vi) Centrality of self-efficacy to the study
- (vii) Scale, methodology, outcomes

2.3 Findings

This section provides an account of the findings from the French and British literature reviews. Where possible, findings are discussed simultaneously and compared directly, but where findings diverge substantially, they are considered under separate headings, '*Kent*' and '*Somme*'. We include a quantitative overview of the studies retrieved followed by a detailed thematic analysis. Studies referred to are referenced according to their position in the inventory.

2.3.1 *Quantitative overview*

Kent

The total number of studies produced by the Kent search, fitting all of the inclusion criteria was 25. The dates of the studies reviewed ranged from 1990 to 2009. These were selected from a much larger number of results generated by electronic searching but which, once the inclusion criteria were applied, was substantially reduced. The initial search using the keyword 'self-efficacy' produced a huge number of items (in PUBMED alone, over 20,000 items were listed) but once these were filtered by age and other criteria, the number diminished substantially. PsycINFO produced 59 results for 'self-efficacy' and 'children' but once studies which focussed on educational achievement, disability or disease were excluded, the number of eligible studies fell dramatically. In contrast, the Cochrane reviews abstracts database produced only three results for 'self-efficacy' and 'children' and these were all related to chronic illness. Within Cochrane, a search using the key words 'self-efficacy' and 'adolescence' produce no results but one for 'self-efficacy' and 'young people' produced one relevant report.

Filtering for studies reporting on relevant interventions had to be done 'by hand' by reading abstracts, as the search engines were not always able to perform this task. Filtering for those studies which employed the self-efficacy concept was also complicated by the variations in importance given to the concept and the different ways in which it was used (see below). Abstracts and titles were initially scanned for the use of the term 'self-efficacy' but it became apparent that the full text would have to be searched to expand the sample to include studies in which self-efficacy was a less central concept and to rule out some studies which seemed to occupy the relevant terrain but which did not employ the concept self-efficacy at all.

Somme

Twelve studies satisfying the defined criteria were included in the literature review, with a broad interpretation of the criteria on the French side. The oldest study dated from 1993, and the most recent studies from 2007. The age criterion had to be revised upwards from 5-18 to 5-24 years to include studies that were targeted at the upper age-bracket of young people. On the French side, search results were meagre, particularly as many of these studies were not produced by francophone researchers but were undertaken in French-speaking zones. It should also be noted that none focused exclusively on the self-efficacy concept: the search on this individual item yielded no conclusive results. Mention should, however, be made of a number of theses in educational science which explicitly address self-efficacy. We were obliged to exclude these from our own review as they investigate levels of self-efficacy among adults in management training, or of educational attainment at school, placing them well outside the defined inclusion criteria.

Table One: Types of risk

<i>Types of risk</i>	<i>Number of studies Kent</i>	<i>Number of studies Somme</i>
HIV/AIDs	12	7
Sex (HIV/AIDs, STIs, reprod. health, contraception)	8	2
Drugs	1	
Alcohol	1	
Drugs and sex	1	
Cardio-vascular/Obesity	2	1 CV, 3 Obesity

Table Two: Intervention settings

<i>Intervention setting</i>	<i>Number of studies Kent</i>	<i>Number of studies Somme</i>
School	11	6
Community	5	3
Varied (reviews)	4	
Family planning clinic	1	
Residential drug treatment facility/ social rehabilitation centre	1	1
Hospital		3
Community and school	1	
Unknown	2	

Table Three: Country of intervention

<i>Country of Intervention</i>	<i>Number of Studies Kent</i>	<i>Number of Studies Somme</i>
USA	19	
West Africa	2	
Italy	1	
Global review	3	
Quebec		5
Francophone Africa		3
Belgium		2
France		2
Non-Francophone Africa		1

2.3.2 Thematic findings

(i) Use of self-efficacy: general or specific

Articles were read through in-depth to establish the way in which self-efficacy was used as a concept. The primary distinction in how the concept of self-efficacy was used across the Kent sample lay in whether it was used in a general or specific sense. For example, while some studies referred to the self-efficacy levels of individuals in a 'looser' way (K31 Haignere et al 1997; K26 Pearlman et al 2002), connoting for example, 'feelings of being able to do things as well as the next person', 'having a sense of one's own good qualities', 'positive self-worth' and the sentiment 'there is little I can do to change many of the important things in my life', most used a more specific manifestation of the concept. Studies were therefore categorised on the basis of whether self-efficacy was used in a general or a specific way. Studies which used a specific conceptualisation of self-efficacy were then categorised by type. More than half of the studies surveyed in the French sample (eight out of thirteen) explicitly invoked the concept of self-efficacy, however, the concept was not really central to any of the studies, and certainly none used it exclusively. On the contrary, self-efficacy was measured among a range of other variables used to investigate related fields such as self-esteem or psycho-social skills. The other half of the French sample studies were not grounded explicitly in the self-efficacy concept, but reported on related concepts such as self-esteem.

(ii) Type of specific self-efficacy

Table Four illustrates the different types of specific self-efficacy referred to in the studies included in the review. The most common forms were sexual health-related self-efficacies, for example relating to participants' perceived ability to use a condom.

Table Four: Type of specific self-efficacy

<i>Types of self-efficacy measures</i>	<i>Number of studies Kent</i>	<i>Number of studies Somme*</i>
Condom use self-efficacy	10	5
AIDs/HIV prevention self-efficacy	6	3
Contraceptive use self-efficacy	1	1
Sexual self-efficacy	2	2
Self-efficacy to refuse unwanted sex	2	1
Self-efficacy for risk reduction/avoidance	1	
Drug resistance self-efficacy	3	
Self-efficacy - physical activity	2	3
Healthy eating		2

* Total exceeds 13 owing to multiple uses.

(iii) The centrality of self-efficacy to the study

Studies were also analysed for how central self-efficacy was as a feature of the study. The French search produced no study in which self-efficacy was a central feature of the intervention, but the Kent sample included five such studies. A summary of each is included below to illustrate the range of ways in which self-efficacy has been incorporated into health promotion interventions.

K003 Jemmott et al (1992) *'Self-efficacy, hedonistic expectancies, and condom-use intentions among inner-city Black adolescent women: A social cognitive approach to AIDs risk behaviour.'*

This very small study (n=19) of inner-city, black, adolescent females and women aged 15-21 years tested the hypothesis that perceived self-efficacy to use condoms, along with hedonistic expectancies, were mediators of the intervention effect on intention to use condoms. A social cognitive intervention to increase perceived self-efficacy and favourable outcome expectancies of condom use was compared with an information-only intervention with a control group. The intervention was culturally and developmentally appropriate, and used exercises, games and video. Behavioural outcomes were not measured, but perceived self-efficacy, intention to use condoms and hedonistic expectancies of condom use were. The study claims that, post-intervention, all three were higher in the social cognitive intervention than in the control.

K004 Dishman et al (2004) *'Self-efficacy partially mediates the effect of a school-based physical-activity intervention among adolescent girls.'*

With a sample of over 2000 adolescent girls, this RCT study used the LEAP (Lifestyle Education for Activity Program) to test the hypothesis that self-efficacy is a partial mediator in physical activity. Over the 2 year intervention, teachers were assisted by research staff to develop an intervention based on reinforcement history, observational learning, modelling of success, persuasion and perceived exertion. Behavioural and mediation outcomes were measured. A control group received no intervention. Researchers claim that this is the first RCT to prove that the manipulation of self-efficacy increases physical activity.

K016 Weeks et al (1995) *'Impact of a school-based AIDs prevention program on young adolescents' self-efficacy skills.'*

This study evaluated a school-based AIDs prevention programme's impact on AIDs and STD related self-efficacy skills and prevention practices, using a quasi-experimental method (treatment and control group). The intervention delivered a 15 session curriculum via trained health educators based on behavioural skills training to enhance AIDs-related self-efficacy, behavioural intentions and prevention practices. Condom use self-efficacy and 'refusal self-efficacy' were amongst the outcome measures. The intervention was found to

have an impact on self-efficacy to buy contraceptive foam from stores, obtain condoms and foams from clinics and intentions to use condoms and foam together.

K018 Berg et al (2009) *'Youth action research for prevention: A multi-level intervention designed to increase efficacy and empowerment among urban youth.'*

This more unusual study used the principles of YARP (Youth Action Research for Prevention) and PAR (Participatory Action Research), informed by multiple theories, to reduce or delay the onset of drug and sex risk by increasing individual and collective efficacy and educational expectations. The sample was constituted of African-American and Latino youths, who were trained to use research to understand their community better and engaged in using the research for social action in community settings. The study tested the hypothesis that community activism has an effect on individual and collective efficacy and individual behavioural change using a quasi-experimental design and qualitative and quantitative data over a three year period. The method seeks to address the way young people make sense of and negotiate their environment, change peer culture and creating pro-prevention norms. 'Youth-PAR is not an approach typically utilized in prevention science, and there is no research on the interaction of community level engagement on individual outcomes.' (Berg 2009: 357). Unfortunately, the results are very unclear.

K026 Pearlman et al (2002) *'Tapping youth as agents for change: evaluation of a peer leadership HIV/AIDs intervention.'* This study evaluated the impact on peer leaders and peer educators of a community-based, peer leadership programme aimed to address the risk of HIV/AIDs, entailing a short course, ongoing group work with adult advisors and planning outreach activities. It was quasi experimental – comparing the intervention group with a control group. This study is notable because of its broader use of self efficacy, for example, one of the items was 'there is little I can do to change many of the important things in my life'. The researchers claim an increase over 9 months in knowledge and perception of oneself as 'a change agent in the community'.

(iv) Self-efficacy as one mediating variable

Kent

In the 20 other studies self-efficacy was a less central concept, most often it was treated as one of a number of mediating variables. In these cases, specific self-efficacy measures (described above) were used as an outcome measure alongside many other theoretical constructs to measure the intervention's impact and in some cases, hypothesise behaviour change. These studies treated self-efficacy as a reliable predictor of behaviour-change and therefore used its measurement as an outcome measure for an intervention's effectiveness. In some of these cases, only hypothesised mediators were measured, with no evaluation of actual changes in behaviour. Others used both behavioural outcome measures (largely self-report questionnaires or interviews) and mediator measures.

Somme

Eight studies reported use of variables referring explicitly to the self-efficacy concept. These variables were not central and self-efficacy was used among other theoretical tools to measure the impact of interventions and, in some cases, these served to formulate hypotheses for changes in behaviour. These studies treated self-efficacy as a factor in predicting behavioural change and used the results to assess the effectiveness of interventions. Results were based on behavioural measures (interviews or self-administered questionnaires). In fact, none of the eight studies set out properly to define self-efficacy. Only two (S006 & S013) offered a fairly detailed explanation of results linked to self-efficacy variables; both focussed on obesity as a risk factor. The French sample studies are summarized below to illustrate the ways in which self-efficacy measures are used to evaluate outcomes of health promotion interventions.

S002, Caron et al (2004) *Evaluation of a theoretically based AIDS/STD peer education program on postponing sexual intercourse and on condom use among adolescents attending high school (Quebec, Canada)*

The study focuses on evaluation of a peer intervention to promote abstinence and condom use and thereby reduce HIV infection risk among young people. This before/after study (undertaken two weeks before and nine months after the intervention) involving 945 juniors and 477 seniors assesses a peer intervention programme (Protection Express Program) on one of the following subjects: postponement of sexual intercourse, communication and assertiveness in relationships, conditions for a healthy relationship, and condom use. The evaluation demonstrates that the Protection Express Program has a positive effect and improves scores for psychosocial variables in the experimental group. Increased abstinence and condom use are observed. 5 self-efficacy items were used to measure postponement of sexual intercourse, or condom use.

S003, Godin et al. (2003) *Evaluation of an HIV and STD prevention program for adolescents in juvenile rehabilitation centers (Quebec, Canada)*

This study undertaken in juvenile rehabilitation centres evaluated the effectiveness of an STD/AIDS prevention programme for young people aged 12-18 with social adaptation difficulties, with respect to known determinants of intention to use condoms (self-efficacy, intention, subjective norms etc.). 925 young people completed a validated pre-test and 647 the post-test. Intervention consisted of ten sessions undertaken by educators from the centres, trained by instructors over 3 days. Undertaken in before/after format and using a control group, the study shows significant modification in psychosocial determinants of condom use: the experimental group is more inclined to use them (intention). The programme also has a positive effect on perceived self-efficacy and personal belief in condom use for sexual intercourse with a new partner. Questions concerning self-efficacy.

S005 Tourette et al (2006), *Pilot project on implementation of an information and support programme on prevention aimed at HIV-positive patients in two Paris care services: HEGP and Saint Antoine hospital.*

The object of this study was to provide HIV-positive patients in two Paris hospital services with attitudes, knowledge and skills specific to their personal context, enabling them to improve their sexual and emotional lives and their self-esteem. A support consultation for prevention and a consultation with a sexologist preceded three-hour themed workshops led by a clinical psychologist. The workshop entitled *Negotiation techniques* aimed to focus on negotiation skills and assertiveness in everyday negotiation situations but also in sexual and emotional life. Patient demand mainly concerned conflict resolution at work and within the care system. Attempts to refocus attention on more personal themes, such as dealing with others or sex and relationships, all met with failure.

S006, Verlhiac (2006), *Effects of psychosocial variables on behavioural change intentions among obese adolescents*, France

This study among a small sample of 32 girls and boys aged 10-14 sought to assess the value of anticipated success (optimism), of perceived control and self-efficacy in expression of behavioural change intention among adolescents participating in an obesity prevention programme. Adolescents identified as overweight following systematic screening attended twelve workshops on physical activity and nutrition, and had four interviews with a doctor and a sexologist. Perceived control, self-efficacy and personal success are positively correlated. Psychosocial variables and BMI play a significant explanatory role in behavioural intention: anticipation of personal success promotes intention to change behaviour, and BMI¹. However, perceived self-efficacy hampers or inhibits behavioural change intention, hence the counterproductive effect of self-efficacy demonstrated by the authors.

S008 Plautz et al (2007), *Evaluation of the reach and impact of the 100% Jeune youth social marketing programme in Cameroon: findings from three cross-sectional surveys*, Cameroon

This study assesses the impact of the programme *100% Jeune* [100% Young] on condom use, levels of sexual activity and determinants of condom use in cities (Yaoundé, Douala) with high prevalence of HIV and unwanted pregnancy. From 2,000 to over 3,000 unmarried young people aged 15-24 were surveyed by stratified sample in 2000, 2002 and 2003. Intervention included a peer education programme, distribution of a monthly magazine, a mass media campaign involving television, radio, and posters, weekly interactive radio programmes, and condom distribution. The evaluation showed no reduction in sexual activity or number of partners, and no effect on reported STI symptoms. The authors did however report increased condom use (self-efficacy).

S009 Plautz et al (2003), *The impact of the Madagascar TOP Network social marketing programme on sexual behavior and use of reproductive health services*, Madagascar

This study sought to determine the scope of the *TOP Network* programme and its impact on sexual

¹ Translator's note: Verlhiac article makes it clear that IMC refers to *Indice de Masse Corporelle*, i.e. Body Mass Index (BMI) but the source text reference to 'l'IMC' appears to make little sense here.

behaviour, use of reproductive health services and factors affecting their use. Two surveys using stratified samples were conducted in 2000 and 2002 on 1,785 and 1,891 young people aged 15-24 in the Malgache province of Toamasina. The intervention was conducted via a network of private clinics offering, in addition to regular services, reproductive health services, including interpersonal communication by peer educators and mass communication by TV and radio channels and mobile video units. The authors report increased condom use and improvements in some factors promoting their use. They also report improved condom availability, increased perceived effectiveness of condoms, and improvements in social norms supporting condom use. 62% of girls in 2000 claimed to be able to persuade their partner to use a condom, as opposed to 80% in 2002. The percentage of young people claiming not to be shy about purchasing condoms increased from 33% to 50% among girls and from 66% to 75% among boys.

S012 Thabet (1993), *Impact of two intervention strategies on attitudes and self-efficacy beliefs with regard to a use of a condom dispenser by male and female adolescents in secondary III, IV and V, Quebec (Canada)*

The authors of the study wished to verify whether the presence of an unsupervised condom dispenser at school is sufficient to promote condom use and increase self-efficacy beliefs in this regard. In some schools, a 75-minute video was shown, with the aim of increasing self-efficacy beliefs with regard to use of the condom dispenser. Increased self-efficacy in respect of use of the dispenser was reported, as was an increase in self-efficacy belief with regard to sexuality in the group which viewed the video as compared with the control group.

S013 Deforche et al (2004), *Changes in physical activity and psychosocial determinants of physical activity in children and adolescents treated for obesity, Belgium*

This study seeks to investigate changes in physical activity levels and psychosocial determinants of physical activity among teenagers treated for obesity. Twenty-four young people categorized as obese (40% overweight) followed a 10-month residential programme in 1999-2000 at the Zeepreventorium Medical Paediatric Centre in de Haan, Belgium. Measures employed were stature as determined by stadiometer, body mass, an interview to measure physical activity adapted from the *Minnesota Leisure Time Physical Activity Questionnaire* and a questionnaire validated by Taylor. Determinants of physical activity were measured using instruments based on the *Operant and Social Learning Theories* and psychosocial theories. 4 types of information were obtained: perceived benefits, perceived impediments, self-efficacy, and social variables. Results show increased physical activity during treatment but a tailing off towards the end of the treatment and after its completion. Television viewing decreased throughout the programme for 62% of young people and increased for the rest, without notable differences according to age or sex. Psychosocial variables, like self-efficacy scores, showed little change, starting from a low base before the programme and remaining low during and after the programme.

- (v) Comparing scale, methodology and rigour

Kent

The scale of the studies varied enormously, from large regional populations in Africa (K36 Meekers et al 2005, n= 5500) to samples of 19 in an area of New York (K3 Jemmott et al 1992). There were a substantial number of studies with sample sizes of over 2000, in particular, those which were school-based and therefore had access to large adolescent populations. Interventions ranged from very long 3 year curricula with multiple sessions to one-off sessions. Evaluations varied from immediately post-intervention to longer-term follow-up over a much longer period of time, the longest being three years. Most studies were quasi-experimental; using a control where there was either no intervention or an information-only intervention. An analysis of the 5 studies which have self-efficacy as a central concept demonstrates a great variety in scale, methodology and rigour.

K003 Jemmott et al (1992) is a very small-scale study of only 19 participants, divided between an intervention and a control group, conducted over a three-week period. Behavioural outcomes are not measured, only intentions to engage in safer sex behaviour in the coming three months. The post-test questionnaire appears to have been administered at the end of the final session, payment for participation received thereafter.

K04 Dishman et al (2004) is a much larger study (n=2744 participants, n=2087 at follow-up), conducted over two years, with measures for both behaviour and mediating variables. 24 high schools were involved in the trial, paired on enrolment size, racial composition, urban, suburban or rural location and class structure, and randomized into control or experimental groups. A process evaluation was conducted to determine the degree to which each school had implemented the various aspects of the intervention. A questionnaire was used to measure outcome expectancies, belief, self-efficacy, goal setting and satisfaction about physical activity. Levels of physical activity were assessed using the 3-Day Physical Activity Recall, administered before and after the intervention, one year apart.

K016 Weeks et al (1995) report on a 15-session intervention, with an initial sample size of 2318 high school students, declining to 1943 by the end of the intervention. A questionnaire, administered pre- and post-intervention, contained measures for 1) (sex and unsafe sex) refusal self-efficacy, 2) condom and foam use self-efficacy and 3) AIDS prevention practices and behavioural intentions for the next 12 months.

K018 Berg et al (2009) describe an intervention involving a total of 316 young people over three years, divided into intervention and control groups. Self-administered outcome evaluation questionnaires to measure individual effects and a network analysis for the intervention group measuring group level effects and the effect of the group on individual level outcomes, were administered at 4 time points. Focus groups

and participant observation were used for process evaluation purposes.

K026 Pearlman et al (2002) involved 235 adolescents, 164 peer leaders and 71 comparison youth. Two cohorts of peer leaders, one of which was repeating the intervention, were compared with a non-intervention group. Via a questionnaire, measures of demographics, sexual history, knowledge of HIV, self-efficacy, perception of self as a change agent (specifically in relation to informing others about HIV), sexual risk-taking, perceptions of the programme were compared pre-intervention and 9 months after.

Somme

The size of the studies varies significantly, from populations of nearly ten thousand people (S007 Ross et al, 2007) or two or three thousand individuals (S008 Plautz et al 2007), to samples of no more than two dozen people (S013 Deforche 2004, n=24). Sample populations taken in communities or in the school environment are generally the largest. Furthermore, the measured interventions are not homogeneous. The longest lasted three years (S008 Plautz et al 2007) and was undertaken in Africa. Others lasted one year, or approximately one year (S013 Deforche 2004). Most were of the 'before/after' type and examined individual cases. Yet others measured exposure to one factor (e.g. a condom dispenser with or without accompanying video: S012 Thabet, 1993). Many of the studies were entirely experimental.

(vi) Models for self-efficacy-targeting interventions

Kent

There is a consensus in the literature that increased knowledge or awareness of risks does not reliably translate into behaviour change in the direction favoured by health promotion or risk reduction agendas. It is therefore theorised that interventions need to aim to enhance skills, change attitudes and alter social norms in order to effect behaviour change. Self-efficacy is one of a number of mediating variables thought to influence behaviour; interventions therefore seek to enhance particular self-efficacies. The typical study contrasted interventions directed towards increasing knowledge with those that sought also to influence behaviour in more social cognitive ways. In a number of studies, the control intervention was one which provided only information. From those studies which specifically targeted self-efficacy of a particular type (e.g. condom use self-efficacy), there was a range of techniques or strategies, sometimes employed singly at other times in combination:

- The translation of 'social modelling' into training up peer educators, or using video presentations or actual visits by people of a similar demographic to the target population to demonstrate the likelihood of risky behaviour resulting in, for example, HIV infection (K038).
- Comparing teacher-led with peer-led interventions (K038, K028, K019)
- Reinforcement by practising safe behaviour, for example correct condom use, asking for condoms or contraceptives in an imagined clinic or shop (K004)

- Role-playing exercises or games to rehearse potentially risky social situations, for example, negotiations for condom use or resistance to unwanted sex, using 'safer sex scripts' (K038, K031, K003).
- Group work to identify potentially risky situations and contexts (K038, K028).
- Reinforcing social norms supportive of preventive behaviour (K029, K018, K038).
- Some studies reported interventions using computer games or CD-ROMs to rehearse role-playing (K025, K039, K008).
- Culturally specific interventions which use the language and cultural references of the target group (K006, K021, K003).
- The target group are sometimes involved in the development of the intervention (K036).

Fisher et al (2002) (K038) provide a useful illustration of the use of a number of these techniques and also a detailed description of their implementation, including: videos of interviews with HIV-infected young people similar to the intervention group, videos demonstrating strong attitudinal and normative support for HIV prevention and showing similar young people talking about negotiating condom use and abstinence and getting out of risky situations; enacting behavioural skills for abstinence, condom acquisition and use; learning a safer sex 'script' using cards containing stages of negotiation behaviour; small group work on negotiating risk scenarios, rules for safer sex communication, role play of these rules. The intervention also employed peer-led activities which involved selecting and training 'natural opinion leaders' to make peer to peer contact, conveying information, addressing attitudes, stressing normative support for abstinence and condom use, teaching HIV prevention behavioural skills, followed up by booster sessions with the same contacts.

Somme

Variables employed to measure self-efficacy are not always cited in the studies but in all cases the authors indicate the theoretical foundations on which their studies are based. Most often, the authors invoke a number of theories, all of which seek to explain behavioural change. Study protocols, particularly the tools employed, samples, types of intervention and those charged with delivering intervention programmes are quite clearly set out. There is a consensus in international health promotion literature that increased knowledge does not necessarily lead to changes in behaviour, particularly in the desired direction. The studies surveyed here demonstrate that several strategies have been used to make interventions as effective as possible.

- Education via peers, trained or even evaluated in advance, use of videos to show causal relationships, particularly for HIV infection (S001, S002, S007, S008, S010)
- Reinforcement of healthy behaviour, for example in condom or contraceptive use (S001, S002, S007, S008, S009, S010)
- Role plays and other techniques to raise awareness of risky social situations, for example in negotiating condom use or refusing sex (S001, S002)
- Computer assistance (computer-tailored feedback) in one obesity study (S011)
- Tailored cultural interventions, using the language and cultural codes of the target group (S001).

- Interventions making broad use of mass media (S008, S009)
- Extension of an intervention programme to the whole of the target population (S001)

(vii) Reviews

The French search produced no reviews, but the Kent search produced five of relevance. None of these were specifically reviewing for self-efficacy, but rather for the effectiveness of interventions aimed at changing 'risky' adolescent behaviour. These reviews are described below, summarising their findings regarding self-efficacy.

K11 Lubans et al (2008) 'A review of mediators of behaviour in interventions to promote physical activity among children and adolescents.' The review found that self-efficacy was the most commonly assessed mediator in youth interventions and there was 'strong support for its role in mediating the relation between theory-based interventions and physical activity'. However, the authors note the small number of such studies and the variability in design and quality, making it difficult to draw strong conclusions about the most effective mediators of behaviour.

K14 Kirby et al (1994) 'School-based programs to reduce sexual risk behaviours: A review of effectiveness.' This review of 23 studies concluded that those with a 'theoretical grounding in social learning or social influence theory and narrowly focussed on specific skills or behaviours, experiential activities, instruction on social influences and pressures, reinforcement of individual values and group norms, that are age and experience appropriate and used activities to increase relevant skills and confidence in those skills' were most effective.

K15 Robin et al (2004) 'Behavioural interventions to reduce incidence of HIV, STD, and pregnancy among adolescents: a decade in review.' The authors do not discuss self-efficacy, but condom efficacy and self-efficacy were outcome measures in 4 out of the 24 programmes reviewed. They conclude that programmes focussing on specific skills for reducing sexual risk behaviours were more effective.

K20 Kirby (2007) 'Sex and HIV education programs: their impact on sexual behaviours of young people throughout the world.' Self-efficacy was not a key feature of the review, but was an outcome measure in a number of the studies included. The review focuses on programmes in varied settings, directed at young people aged 9-24 years, evaluating their effect on behaviour and on mediating factors. One of the mediating factors was self-efficacy, for example, self-efficacy to refuse unwanted sex and for condom use were outcome measures in a proportion of the studies. More than half the studies that measured impact on self-efficacy to refuse unwanted sex, improved that particular refusal self-efficacy and more than two-thirds increased self-efficacy to use condoms. But, few measured impact on STDs or pregnancy, and those that

did showed no significant positive effect.

K24 Lopez et al (2008) 'Theory-based strategies for improving contraceptive use: A systematic review.' This study reviews 14 RCTs of theory-based strategies for improving contraceptive use (not all adolescent studies). Theories identified included social cognitive; health belief model; social cognitive theory; theory of reasoned action; theory of planned behaviour and protective motivation theory. 10 out of 14 showed positive results. Self-efficacy was used as a measure in 6 studies relating exclusively to adolescents.

An additional review, published by the Cochrane Collaboration is considered separately from the previous five, because it is unclear how self-efficacy is understood within it. Faggiano et al's 'Cochrane Review of School-based prevention for illicit drugs' use' (2009) performs a review of randomised-controlled trials, case controlled trials and controlled prospective studies evaluating school-based interventions designed to prevent substance use. Reviewing 32 studies, with 46539 participants, 28 of which were conducted in the USA, self-efficacy was not a focal point of any of the studies, but was one of many outcome measures in some studies. Where the impact on self-efficacy was measured (6 studies), there was no difference in effect between the intervention and the control. There is some indication that skills-based interventions were better than affective interventions in the improvement of self-efficacy but not drug-knowledge at immediate post-test. Of the 3 studies analysed for the effect of interactive versus passive techniques, none showed a statistically significant effect on self-efficacy (Faggiano 2009: 28). Skills based programs appear to be effective in deterring early-stage drug use and 'skills-based interventions are only better than affective ones in self-efficacy' (2009: 2) but it is unclear whether self-efficacy is considered a skill or an affective quality.

(viii) Deviations to inclusion criteria

Kent

There were no significant deviations to the inclusion criteria other than to include 2 studies (K4 Dishman et al 2004 and K11 Lubans et al 2008) which targeted physical activity rather than more usual 'risky' behaviour. These studies were included because they employed a similar model of intervention and research design to the other studies and conceptualised self-efficacy in similar way.

A further study which deviated from the inclusion criteria but which is potentially relevant for the issues motivating this literature review was that of Winnett et al (1999) which reports on an intervention to effect health behaviour change through influencing collective efficacy. This is a potentially interesting development in self-efficacy theory in that it seeks to enhance social and environmental support for individual changes, developing further the social aspect of self-efficacy. Collective efficacy is defined by Bandura as, 'a group's shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainments' (Bandura 1997: 477 quoted in Winnett et al 2002: 132 K037).

Somme

The adjustment to the French search criteria has been described above in the 'inclusion criteria' section and will be discussed further in the following section.

2.4 Discussion

Kent

The motivation for embarking on this literature review was to find evidence of potentially useful interventions to tackle the apparent lack of agency found amongst certain teenagers from a disadvantaged area of the UK. The researchers had been struck by the lack of perceived control the teenagers had over their lives and consequently, their lack of control over their own behaviour, especially concerning sex, drugs and alcohol. The concept of self-efficacy seemed to offer some promise of capturing this phenomenon. However, this review suggests that although the concept may be a useful theoretical tool, it does not translate straightforwardly into interventions that successfully address problem behaviour. The findings demonstrate that the concept of 'self-efficacy' has been interpreted and mobilised in a wide variety of ways and frequently intersects with concepts which seem very similar and are sometimes used interchangeably. From the review, concepts emerged which seemed confusingly similar to self-efficacy, such as personal and social skills; life skills training; problem behaviour theory; competence enhancement; self management and social skills; information-motivation-behaviour model; personal control, which make it difficult to retain a clear idea of the self-efficacy concept and the claims made for it.

It is apparent that the development of the concept of self-efficacy has not been straightforward or uncontested. Some criticisms emerged early on in self-efficacy's development, for example, in relation to the ambiguity between 'self-efficacy' and 'perceived outcomes', for example, according to Eastman and Marzillier (1984), self-efficacy is an 'ambiguous' and 'ill-defined' concept, which is insufficiently distinct from the individual's perceptions of the outcomes of a particular behaviour.

Although this is a discussion that took place within psychology and is slightly impenetrable to those from other disciplines, other critiques are more easily understood. For example, Hawkins (1995) directly engaged Bandura (1995) in debate about whether self-efficacy is a descriptive metaphor and a predictor or a true cause of behaviour. More recently, Hyde et al.'s literature review found that while there is evidence that self-efficacy can be increased through interventions, there is, 'little evidence to determine whether such increases change behaviour' (Hyde et al. 2008, p.607). Others have also queried the claims made for self-efficacy, for example, Orlando et al argue that resistance self-efficacy;

'has been a major focus of many social-influence-based prevention programs with the rationale that adolescents succumb to peer pressure to use drugs because they do not have the skills to resist. While this makes intuitive sense, evidence for the importance of resistance self-efficacy is sparse.' Orlando et al (2005: 44)

Others have argued that self-efficacy has been 'over-stretched' as a concept; while it may have some descriptive benefit, it is in danger of being constructed as a 'magic bullet'.

'It seems to us that self-efficacy as a theoretical construct is in danger of being elevated to a grandiose status in the explanation of human behaviour in the way that other plausible constructs have been in the past (e.g. learned helplessness, self-esteem).' (Eastman and Marzillier, 1984: 226)

This review has found that self-efficacy has been used in interventions in a more confused way, rather than as an over-simplistic, 'magic bullet'. Such confusion may be the outcome of applying a concept first developed in relation to specific problem behaviours, for example phobias or addiction, to more general populations and behaviours such as adolescent sexual activity. Bandura acknowledges that risky behaviour experimentation is part of the process of adolescent development, arguing that,

'Adolescence has often been characterized as a period of psychosocial turmoil. While no period of life is ever free of problems, contrary to the stereotype of "storm and stress," most adolescents negotiate the important transitions of this period without undue disturbance or discord. However, youngsters who enter adolescence beset by a disabling sense of inefficacy transport their vulnerability to distress and debility to the new environmental demands. The ease with which the transition from childhood to the demands of adulthood is made similarly depends on the strength of personal efficacy built up through prior mastery experiences.' (Bandura, 1994)

A possible problem with many of the US interventions assessed in the review was that they addressed a very wide population of 'normal' adolescents, albeit sometimes the samples were drawn from 'deprived' populations, as defined by ethnicity or being from the 'inner-city'. There is a risk of losing perspective or predicting dysfunction in a very broad population by assuming that socially disadvantaged populations necessarily lack self-efficacy, but there is also a further risk in turning this around to seek to increase self-efficacy as a way of addressing disadvantage. It may seem obvious that social disadvantage would undermine an individual's sense of agency, but this need not necessarily be the outcome. Equally, improving an individual's sense of self-efficacy might have no impact on their real material circumstances or social circumstances.

Evidence of a causal relationship between self-efficacy beliefs and precise behavioural outcomes is weak. Describing the psycho-social variables associated with certain behaviour is not the same as identifying causation.

'there is a discordance between the striking and bold claims made for self-efficacy by Bandura and the limited and specific relationships demonstrated in his studies' (Eastman and Marzillier 1984: 226)

There are additional difficulties associated with assessing outcomes in a population (adolescent) who are by their nature rapidly changing, for example going from not being sexually active to being sexually active, or beginning to experiment with alcohol or drugs.

The moral development of children into adults capable of autonomous, responsible decision-making is an understandable cause of concern to contemporary society. Adolescence has come to be seen as a particularly problematic stage of life, when young people struggle to understand society's expectations of

them and to create a place for themselves in the world. Adolescent sexuality and risk-taking behaviour has become a particular cause of concern because it is a locus for confusion about what values adult society should seek to convey to the younger generation. The ongoing debate about sex education in the UK is a testament to the competing voices and the clashing discourses of morality, health, liberalism and sexual constraint. The review found many studies, most from the USA, where solutions have been sought to the problem of controlling adolescent sexuality and experimentations in risk through the promotion of 'healthy behaviour' but which view the provision of information as inadequate. The psycho-social approach seeks to address the psychological prerequisites for behaviour change. As Wight et al argue,

'It is relatively easy to design self-efficacy enhancing exercises concerning the correct use of condoms. However, it is more challenging to design self-efficacy enhancing exercises promoting discussion of sexual desires and consequent behaviours with potential partners, friends and health professionals (who may be important sources of advice and resources). Yet, as we have noted above, it is precisely these interaction management skills which may be most important when preparing individuals successfully to manage their sexual encounters.' (Wight et al 1998, p. 325)

However, the lack of conclusive results from such interventions suggest that perhaps there are limitations to trying to understand adolescents' willingness or ability to exert control over their sexual behaviour and their desires to experiment with drugs or alcohol through a discourse of 'skills'. Complex social relationships, especially those which involve experimentations in intimacy and sexuality, forge, and are forged by, adolescents' developing sense of self, their social identity and their realisation of their place in the world, these are perhaps less amenable to 'interaction management' than might be hoped from a health promotion perspective.

Somme

It is clear that, in France at least, the concept of self-efficacy does not appear well integrated into professional practice, and there can be no doubt that its use remains restricted to the academic domain and to disciplines linked to social psychology, to educational science (particularly adult training and careers or educational guidance), and to works on social integration or management. As far as health is concerned, it would appear that the self-efficacy concept has had a wider influence on patient education – particularly in the areas of cardio-vascular illnesses or chronic illnesses – than in health promotion.

A second factor which should also be taken into account, even though its effects cannot be directly measured, is the translation of the term 'self-efficacy'. Francophone authors seem to hesitate between *auto-efficacité*, the direct translation, and the more literal *efficacité personnelle*, and searches were complicated by the fact that, in French, *efficacité personnelle* does not merely denote self-efficacy: searches also listed documents relating to personal development, the search for identity etc., and others referring to a 'psychology of well-being', which bear no relationship to Bandura's research.

A third, no less significant, factor is the availability in French of Bandura's works. While *Social Learning*, published in the United States in 1976, was translated in French as early as 1980, the second major translation of Bandura's work only became available in French in 2003, more than 20 years later and a mere

seven years ago. It would be unsurprising, therefore, if the paucity of studies unearthed in the databases were also a reflection of the late dissemination of the self-efficacy theory to a francophone audience.

It can be concluded that French research in this area is decidedly limited: we found only a single document referring specifically to research undertaken in France. Moreover, among the few studies written in French (international journals demand contributions in English), the majority focused on Africa or Quebec, and were sometimes produced by Anglophones.

The small number of studies explicitly treating self-efficacy in the databases requires examination. It suggests either non-publication in the journals surveyed by francophone research databases, or a small number of studies by Francophones which incorporate the self-efficacy concept. In this field, French researchers are all but absent; more common are Quebecois or Belgian researchers. It might be hypothesized that the self-efficacy concept remains, in francophone countries, still largely unknown except in university psychology or social psychology groups. It is also noteworthy that health education and health promotion manuals in French largely overlook theories of behavioural change. The very idea that health promotion and health education might aim to change behaviour is a controversial one, to which a large majority of practitioners take a hostile view. France is in fact noteworthy for a clear division between explanatory theories of social behaviour and educative practices: the former are confined to university departments, while the latter take little account of them, even though the Quebecois and to a lesser extent the Belgian approach draw their inspiration from that employed in the Anglo-Saxon world.

The 1969 WHO definition of health education (see *WHO Planning and Evaluation of Health Education Services*, in Technical Report Series, no.409), states: 'Health education essentially represents action directed at individuals in order to induce them to change their behaviour. In general terms, it aims to enable them to acquire and preserve the habits of healthy living (...)', is not entirely valid for France or francophone Europe, neither for behavioural change nor for the habits of healthy living. Both expressions have more critics than supporters. Debate turns on the position of the individual and his/her control over behaviour. What might be termed 'the French model' appears to lay greater emphasis on an ethical concern to avoid prescription of certain behaviours and the condemnation or even incrimination of individuals' life choices, while at the same time promoting individual responsibility. Furthermore, a purely behaviourist approach, as self-efficacy would appear to be, finds little support in that it is overly centred on the determinism of an individual's social upbringing, which calls into question the predictive aspect of self-efficacy in health behaviours. In practice, *self-esteem* seems a less controversial term, even though it is related to, and sometimes confused with, self-efficacy. At the level of psycho-social competence, self-esteem would thus appear to offer a valuable tool for the construction of the self and in a person's relations with others. Without discussing this concept in detail, Bandura himself warns against confusing two concepts which emanate from two different theoretical constructs and do not necessarily cover the same ground. To quote Nagels: 'High self-esteem does not imply a belief in good outcomes through one's actions: indeed, self-esteem is linked not to activity but to the image one creates of one's own self'

The programmes surveyed covered a range of research themes. A large number were directed towards reducing HIV or other sexually transmitted infections (STI's) through recommended abstinence or condom use. These have been undertaken in different milieux, although particular value has been attached to the school environment. Programmes are also found in social rehabilitation centres for vulnerable adolescents (e.g. juvenile rehabilitation centres in Quebec), and for example in deprived countries or districts. Some additional programmes added to the literature review promote cardio-vascular health in particular by tackling obesity initiatives through promotion of healthy eating and physical activity.

These programmes are aimed particularly at the 12-18 age-group, but also at people up to the age of 25 in Africa with respect to sexual and relationship education. Many employ peer education as the main intervention method, centred upon skills (using role-play techniques in particular) which are known to have a positive influence on self-efficacy and therefore on behavioural change intention. Other methods are used to attempt to improve feelings of personal efficacy and psycho-social skills in general: a school curriculum taught by specially trained teachers, or pedagogical video interventions, for example. Francophone African countries make extensive use of large-scale media campaigns (television, radio, newspapers), as well as counselling. A Belgian team investigating psycho-social variables related to self-efficacy, for example, uses computer-tailored feedback, which is employed in cardio-vascular health education for adults.

The programmes were almost always evaluated by self-administered questionnaires before and after the test, most often but not always with a control group. Two types of evaluation are found: an evaluation of the impact of the programme on the targeted behaviour and an evaluation of the effects of the programme on feelings of self-efficacy and on other psycho-social skills. The latter evaluation is most often based on questionnaires framed according to planned behaviour theory and validated by earlier studies.

Evaluation of psycho-social variables includes evaluation of attitudes relating to behaviour (personal judgement of behaviour and its consequences), subjective norms (opinion of intimates regarding behaviour) and perceived control (feeling of self-efficacy). Knowledge of the subject and behavioural change intention are generally both evaluated.

Most studies which evaluate the impact of the programme both on behaviour and psychosocial variables present evidence for improved psychosocial skills scores. On the other hand, impact on risky behaviour is more limited. Two studies are however noteworthy in this regard. Deforche (S013) reports explicitly that there was no improvement in self-efficacy scores, measured in three domains, during or at the end of the intervention programme. However, this programme was not designed to improve self-efficacy among adolescents treated for obesity. Moreover, this might explain the relative failure of the programme with respect to expected levels of physical activity: adolescents increased duration, intensity and frequency of physical activity during the programme, but physical activity fell back to its pre-programme level six months after its conclusion.

The study by Verhliac (S006), which also focused on adolescent obesity, presented one of the more surprising results: self-efficacy appears to halt or even hinder all behavioural change intention. For the

author, the negative effects of self-efficacy are linked to subjects lacking the means to implement their behavioural intentions.

The main criticism which can be levelled at all these studies is that self-efficacy is employed as a social learning technique and not as social learning per se. When one reconsiders the theory of self-efficacy as expounded by Bandura himself, the term is defined as 'an individual's belief in his/her capacity to organize and execute the patterns of behaviour required to achieve desired outcomes' (Bandura 2003). Self-efficacy is therefore at the centre of a 'triad of causality' in which the individual acquires the ability systematically to negotiate his/her behaviours, emotional relationships and actions in accordance with the physical and social environment (Nagels). This model of instruction, or vicarious learning, appears to have been distorted by the different authors whose works we examined. Most of the studies appeal, for example, to peer education to obtain a particular learning outcome by imitation. It is certainly true that imitation, or more precisely learning by observation, is central to Bandura's theory, but it should be recalled that vicarious learning implies 'construction, use and evaluation of behavioural rules' (François).

The studies reviewed limit themselves to young people's intention to change their behaviour without this change being subsequently recorded. This is one of the most important limitations, of which the Deforche study (SO13) provides a good example. One might add that where an appeal is made to peers, actions begin with briefing or even training of the peers themselves in advance of intervention with the target group. It seems reasonable in those circumstances to ask what is the relevance of a coping or social learning experience, when the example behaviours may not even be typical of the persons themselves, however well-intentioned the latter may be. This is not to question the bases of self-efficacy: Joet and Bressoux note that 'Anglo-Saxon research undertaken in the United States (e.g. Pajares & Schunk, 2001) demonstrated that a feeling of self-efficacy was correlated positively with success at school. The higher the pupil's feeling of self-efficacy, the better his/her educational performance'. We would simply note that the studies we reviewed, while not without research interest, do not appear to offer firm conclusions in the area of interest to us. Nor is it our wish to discuss the strategy of peer education – which would require a separate document given the plethora of available literature – but we would merely recall that there seems little evidence that peer education is superior to that delivered by adults. In fact, the effect of the action upon the peers themselves seems to have been of greater benefit!

A final criticism of Bandura's work lies in its supposed ethnocentricity, summarized by François as follows: 'Even a cursory reading of the literature raises some convincing counter-arguments (François, forthcoming b). The value of self-efficacy processes seems very much to vary according to culture: results from some intercultural comparisons suggest that the theory is a better predictor of behaviour for western populations than for others, notably Asian ones'. This is an interesting factor to consider as most of the studies on which we worked focus either on African populations, or on populations of immigrant background living in western countries. It follows that both implementation of actions and their evaluation risk being skewed by cultural factors, to which their proponents appear not to have paid attention and which, perhaps, might explain the inconclusive results obtained.

2.5 Conclusions

The concept of 'self-efficacy' proved to be a less straightforward 'fit' than anticipated with the theoretical concerns originally motivating the project. However, the literature review process produced some useful and creative points of cross-national discussion, which have clarified the issues involved in improving young people's well-being and highlighted the shortcomings of existing interventions and research. Drawing together the findings from both literature reviews, we can conclude that:

- There is a lack of rigorous evidence for the effectiveness of self-efficacy oriented interventions to reduce the risky behaviour of young people. The weakness of causality was noted by both research teams; the tendency to measure attitudes and intentions rather than behavioural outcomes may be intrinsic to the self-efficacy concept, because it is understood as a mediator rather than a direct predictor of behaviour change.
- Few studies engage with self-efficacy directly or critically: discussion of its validity and theoretical development has taken place in a separate literature and tends not to be brought into the design and evaluation of interventions.
- There is considerable crossover and confusion with other psycho-social concepts; this was a problem particularly for the French team who found few interventions in which self-efficacy was theoretically central.
- Although in the Anglophone literature the concept was relatively well-defined, in the Francophone search, the term was confused by ambiguous translations.
- There is a distinction between the Francophone world and the Anglophone world in the degree to which the self-efficacy concept has been integrated into professional practice in the field of health promotion.
- The works of Bandura have only recently been translated into French and have therefore had only limited influence on Francophone theory and practice.
- Frustratingly, neither team found studies relating to their home countries (France and the UK). Questions are therefore inevitably raised concerning the comparability of findings from diverse cultural contexts.
- The review raises some interesting questions, pursued further in the workshop described below, concerning the different national approaches to the ethics of interventions designed to change behaviour.

3.0 Workshop

Self Efficacy, Young people and 'Risky Behaviour': Evaluating the Merits of Psycho-Social Interventions

End of Project Workshop, 10 September 2010, University of Kent, Canterbury

a) Introductory plenary

The research commissioners introduced the workshop by situating the project within concerns to prevent future public health problems at an early stage. The literature review on self-efficacy was motivated by a need to further our understanding of the theory lying behind current interventions with young people, inspired by a previous project researching teenage pregnancy. The researchers outlined the key findings and raised some of investigating the translation of self-efficacy theory into practical interventions. French colleagues discussed the difficulty of translating the concept into a French context, given that it has strong Anglophone but weak Francophone prevalence. It was noted that Bandura's work has only recently been translated into French.

A presentation by the Kent commissioner of young people's services discussed how the equivalent of a self-efficacy framework can be identified in the 'life skills approach' towards managing risky behaviour, which focuses on building young people's 'protective factors' and also engages with young people's experiences and views to further develop services. A French practitioner who works on health education within education explained that although self-efficacy was not explicitly familiar to colleagues, there is an emphasis in her work on making young people responsible for their health behaviour, but without defining norms or apportioning blame.

b) Mono-lingual workshops

Kent

A vigorous and wide-ranging discussion involving all the Kent workshop participants resulted in the development of five key-points that were then reported back to all attendees at the final plenary. The discussion raised the following:

- The 'deficit' model of engaging young people was queried, with questions raised about definitions of vulnerability and the ethics of interventions. It was also suggested that the deficit model focuses on failure and does little to help us understand why some people from difficult backgrounds succeed.
- Questions concerning the definition of risk and harm were raised, with some arguing that young people need support to manage their risky behaviour and others arguing that taking risks may be developmentally necessary during adolescence.
- The uncertain political and economic climate was referred to by a number of people as prompting a need to re-think State interventions.
- Participants queried the relationship between self-efficacy and other concepts such as well-being, resilience and self-esteem.

- Speakers raised the influence of environmental or structural factors on 'risky' behaviour and the existence of alternative, 'internal' meanings given by communities to behaviour, such as teenage pregnancy, that are externally labelled 'risky'.
- Practitioners spoke of the burden placed on health professionals by the expectation that health and adult services should improve deprivation and wellbeing in a context of increasing inequality. Comments were also made about a 'co-dependence' between practitioners and disadvantage communities or individuals.
- The lack of co-ordination between different service sectors was also spoken of and the difficulty of measuring outcomes, in particular of those who successfully manage to get themselves out of areas of deprivation.

Somme

A very full discussion took place within the French group, which addressed a range of issues, concerning both self-efficacy and health promotion within the populations. Having read the joint report and the presentations and discussions from the start of the workshop, the participants feel that the value of the self-efficacy concept is inconclusive in the area of health education initiatives. The discussion can be summarized in five key points:

- The concepts and values applied in professional practice need to be examined. Such an examination must, however, be undertaken in a spirit of consensus to ensure that action is not hampered by the theoretical perspectives or convictions of either side.
- Self-efficacy is too restrictive, and appears only to act on the behavioural dimension. In practice, however, sexuality is irreducible to a mere issue of behaviour. Sexuality is not something that can be 'managed' in the 'rational' manner in which, for example, one might manage one's diary. Sexuality is also, and above all, a question of emotions and feelings.
- The self-efficacy concept is, furthermore, too individual-centred. The hypothesis on which this concept rests is that society cannot be changed, and that the individual is therefore obliged to adapt to it. The behaviour which the individual adopts, however, is in large measure reflective of society and in part determined by the social role and the social position he/she occupies. While Bandura does build these factors into his theory, they do not seem meaningfully to be incorporated in self-efficacy based interventions. Society, on the other hand, needs itself to change and adapt. Only at societal level, for example, can a more favourable environment for individual health be envisioned. Moreover, at the level of values, the coherence of the model offered to young people by adults can also be called into question. Adults' own practice needs to be in line with what they preach in health education.
- Effectiveness, or self-efficacy, should also be a collective concept, and not limit itself to an individual dynamic. Groups too are able to take collective decisions to improve their own health. This dimension does not feature in self-efficacy and deserves a proper conceptual basis.
- Finally, the previous point highlights the need to take time to reflect. Interventions in professional practice are often undertaken as a matter of urgency or, at best, in too short a time period to allow proper reflection upon the principles which underpin them, or upon the real or supposed role of self-

efficacy within them. It would be interesting to learn how this concept has been applied in other fields and disciplines, for example in management or professional rehabilitation.

Finally, the danger of extending to private life the 'productivity' mindset, in which everyone is increasingly obliged to be 'efficient', even outside of work, must be avoided.

c) Final plenary

Participants reconvened for the final workshop session to compare notes on the monolingual discussions and to set out each group's key points.

d) Conclusions and recommendations

Kent

1. There was concern about the use of self-efficacy in interventions without any evidence that it works in practice.
2. There is a need to use a wider, multi-disciplinary and holistic approach to identifying and tackling social problems.
3. Risk in itself is not a bad thing. It has a role to play in human development, but when and how does it become useful in the development of the individual?
4. Does the interpretation of behaviour as it is presented by the Health Service ignore the wishes and choices of the individual and the community?
5. How do we shape a society which integrates young people and develops their aspirations?

Somme

1. We need to rethink our concepts and values as applied in practice, but is there a potential problem in that this might hamper practice if everyone starts from different perspectives.
2. Sex cannot be reduced simply to behavior: Sex is not something which can be 'managed' in the reasoned way in which one might arrange one's timetable.
3. The self-efficacy concept is too individual-centred: Society is seen as being as it is, unchanging, the individual therefore has to adapt to it. But society can change and adapt itself too. It is not difficult to conceive of a social environment which is more conducive to individuals' well-being.
4. Is the model offered to young people by adults really a coherent one, and are its values sound?
5. Collective self-efficacy: Groups are also able to take collective decisions to improve their own health.
6. Need for thinking time: We are under too much pressure in the context of interventions to think through our guiding principles, or to examine the potential or actual role of self-efficacy. How does self-efficacy function in other disciplines, e.g. management, professional re-habilitation.
7. There is a danger of falling into the 'productivity' mindset, even in one's private life: are we not under pressure to be increasingly 'efficient' even outside of work?

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Appendix

List of Workshop Attendees

Name	Role	Organisation
Gerald Bassett	Lead Commissioner - Healthy Lifestyles and Sexual Health Commissioning	NHS Eastern and Coastal Kent
Eve Beach	Commissioning Project Manager	NHS Eastern and Coastal Kent
Julie Beavers	Team Leader Outreach Nurses	NHS Eastern and Coastal Kent
Mark Bowles	Project Manager - Child Health Commissioning	NHS Eastern and Coastal Kent
Jennifer Holland	Health Promotion lead for Healthy Schools and Young People	NHS Eastern and Coastal Kent
Lisa Maidment	Head of Children's Universal Integrated Service	NHS Eastern and Coastal Kent
Claire Martin	Acting Assistant Director of Public Health	NHS Eastern and Coastal Kent
Jenny Billings	Deputy Director/Senior Research Fellow, Centre for Health Service Studies	University of Kent
Dr Jan Macvarish	Research Associate, Centre for Health Service Studies	University of Kent
Hao U Wong	Final Year Psychology with Clinical Psychology Student	University of Kent
Daniel Wood	2 nd Year Criminology and Sociology Student	University of Kent
Helen Anderson	Preventative Services Manager Ashford	Kent County Council
Andy Heather	Principal Educational Psychologist	Kent County Council
Ruth Herron	Senior Commissioner	Kent County Council
John Mitchell	Preventative Strategy Manager	Kent County Council
Sue Mullins	Business Development Manager - Kent Safe Schools	Kent County Council
Alice Chapman-Hatchett	Director	The Health and Europe Centre
Samantha Wood	Business Development Manager	The Health and Europe Centre
Philippe Lorenzo	Directeur	IREPS
Dominique Barot	Médecin responsable de la prévention des enfants	Conseil général de la Somme Service de PMI
Catherine Huette	Médecin responsable de la prévention prénatale	Conseil général de la Somme Service de PMI
Christine Lefebvre	Conseillère conjugale et familiale	Conseil général de la Somme Direction des territoires
Philippe Rycek	Chef de service	Conseil général de la Somme Mission Europe
Anne-Sophie Pourchez	Infirmière conseillère technique auprès de l'inspecteur d'académie de la Somme	Education nationale MPSFE
Corinne Maincent	Infirmière conseillère technique auprès du recteur de l'académie d'Amiens	Education nationale – Rectorat de l'académie d'Amiens
Séverine Verschaeve	Inspectrice d'académie, inspectrice pédagogique régionale en EPS	Education nationale – Rectorat de l'académie d'Amiens
Sabine Dauchet-Lebeau	Directrice - coordinatrice	Maison des Adolescents de la Somme
Arlette Meunier	Maitre de conférence, sociologue	Université de Picardie Jules Verne