

Fatigue Risk: The roles of napping, depression and alcohol

Brad Strahan
Psychologist



Content

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 - Level of demand
 - Coping strategies
- **Napping**
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- **Method & Results**

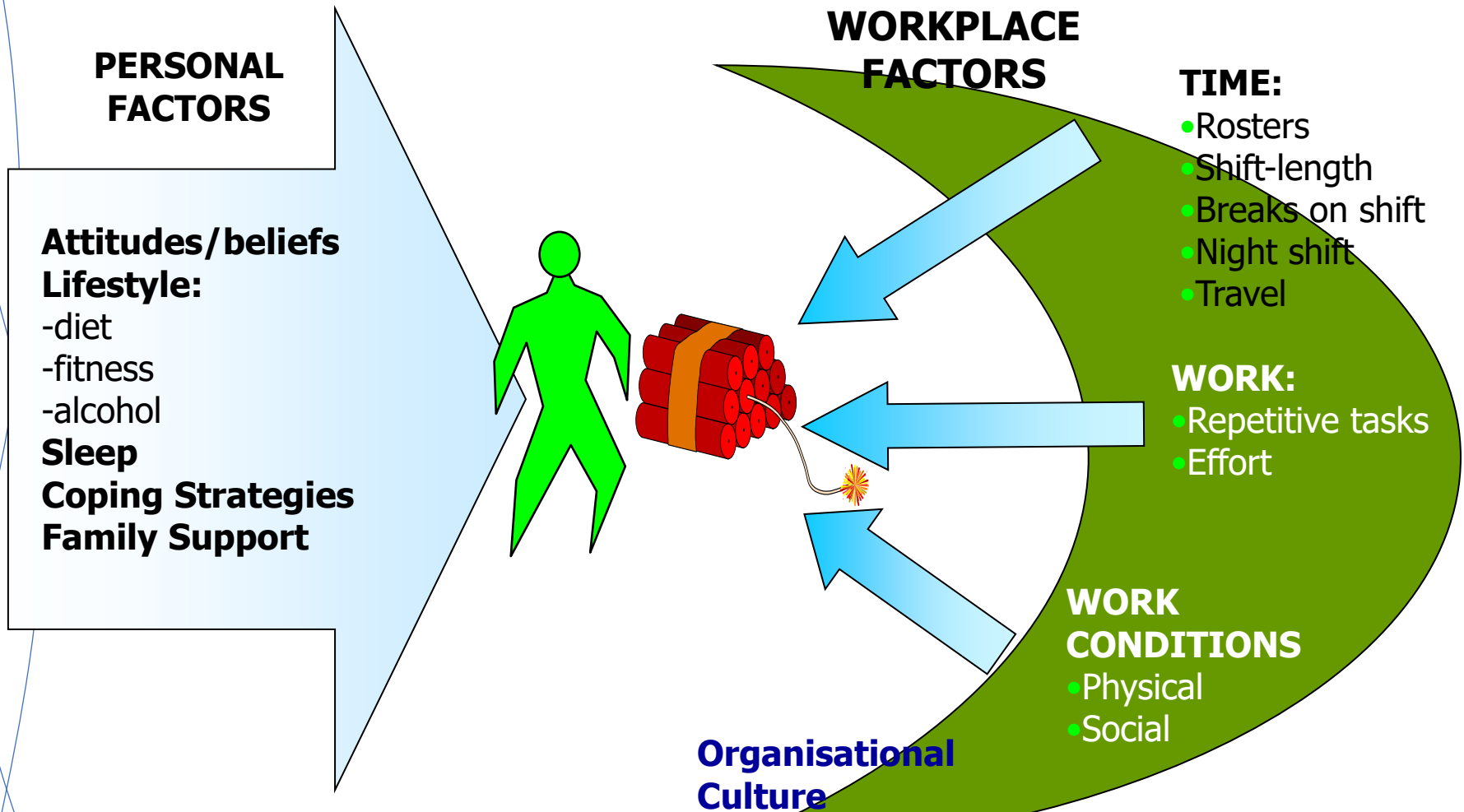
- **Discussion**
 - Napping as a fatigue management strategy?
 - Depression
 - Alcohol
 - Implications





Background

Guiding model for 28 site-based Fatigue Studies, 2000 - 2009



Level of demand



**Fatigue results from an imbalance between time
and energy expended at work
(the demands)
and
the process of recovery.**



Level of demand



Work demands:

- time at work
- travel time
- effort required
- work conditions
- work procedures

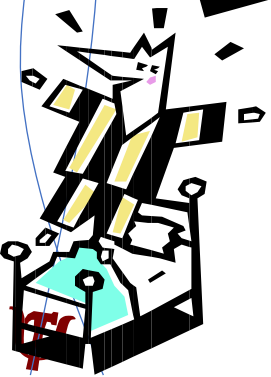
Recovery:

- sleep (quality + quantity)
- time management
- lifestyle decisions
 - limits on alcohol/drugs
 - stress controlled
 - effective relationships
 - adequate exercise/diet
- physical health

Work/lifestyle package balance



**Work/lifestyle package
is managed – work is
sustainable**



Level of demand



Recovery:

- sleep (quality + quantity)
- time management
- lifestyle decisions
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Work/lifestyle package balance

Work demands:

- time at work
- effort required
- work conditions
- work procedures
- level of ψ demand

Work/lifestyle package is not sustainable - fatigue + other vulnerabilities emerge

+ Lifestyle mismanagement

- poor sleep
- poor time management
- inadequate diet
- excessive alcohol/drugs
- Stress – job, family etc



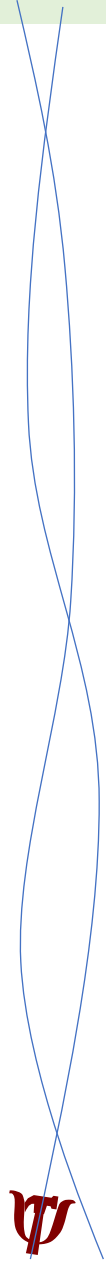
Level of demand

Symptoms of unsustainable work/lifestyle balance:

- Feelings of lethargy
- Lacking in motivation and drive
- Disturbed sleep – inadequate hours & quality of sleep (disorder??)
- Symptoms of depression
- Decline in physical health & development of symptoms
- Cognitive impairment:
 - lapses in concentration
 - forgetfulness – ie. memory loss
- Poor self image - sense of not coping
- Attribute responsibility for current state to others
- Poor coping – ie. avoidance expressed via alcohol/drugs, withdrawal
- Vulnerability to stress – “grumpy bastards”
- Relationship difficulties
- Safety is threatened for self & others
- Poor work performance



Coping with Fatigue



Coping

Types of strategies for managing fatigue

Preventive Strategies:

Lifestyle management

- planning/managing sleep time
- limiting alcohol
- diet/ exercise

Managing time-off

- resting on days off

Managing the job

- planning time and tasks
- task rotation
- setting objectives/sharing responsibilities

Reactive Strategies:

Coping

- stimulation/coffee/ short breaks/wash face etc
- cat naps

Attempts

- try to do things but don't work

No Strategy for managing fatigue

Strahan, 2002, 2003



Napping – a fatigue management strategy?

- Some evidence of benefit and improved alertness after short nap;
- Research conducted in controlled environments (e.g. long-haul flights, and laboratory studies)

BUT,

- Sleep inertia (period immediately after waking);
- Interference with main sleep period;
- A “nap” during shift is better than a crisis, but do we want to institutionalise napping? ie. regular napping on night shift;
- Is “napping” just reactive coping?
- What creates the need for napping?
- What happened to the obligation to turn up “fit for work”?



Depression/Alcohol

- Previous studies have found links between shiftwork and the occurrence of increased mood disorders;
- Clear links between alcohol consumption and depression;
- The combination of extended hours of work, limited sleep, and excessive alcohol represents a self-perpetuating cycle and recipe for increased mood disorders and fatigue risk;

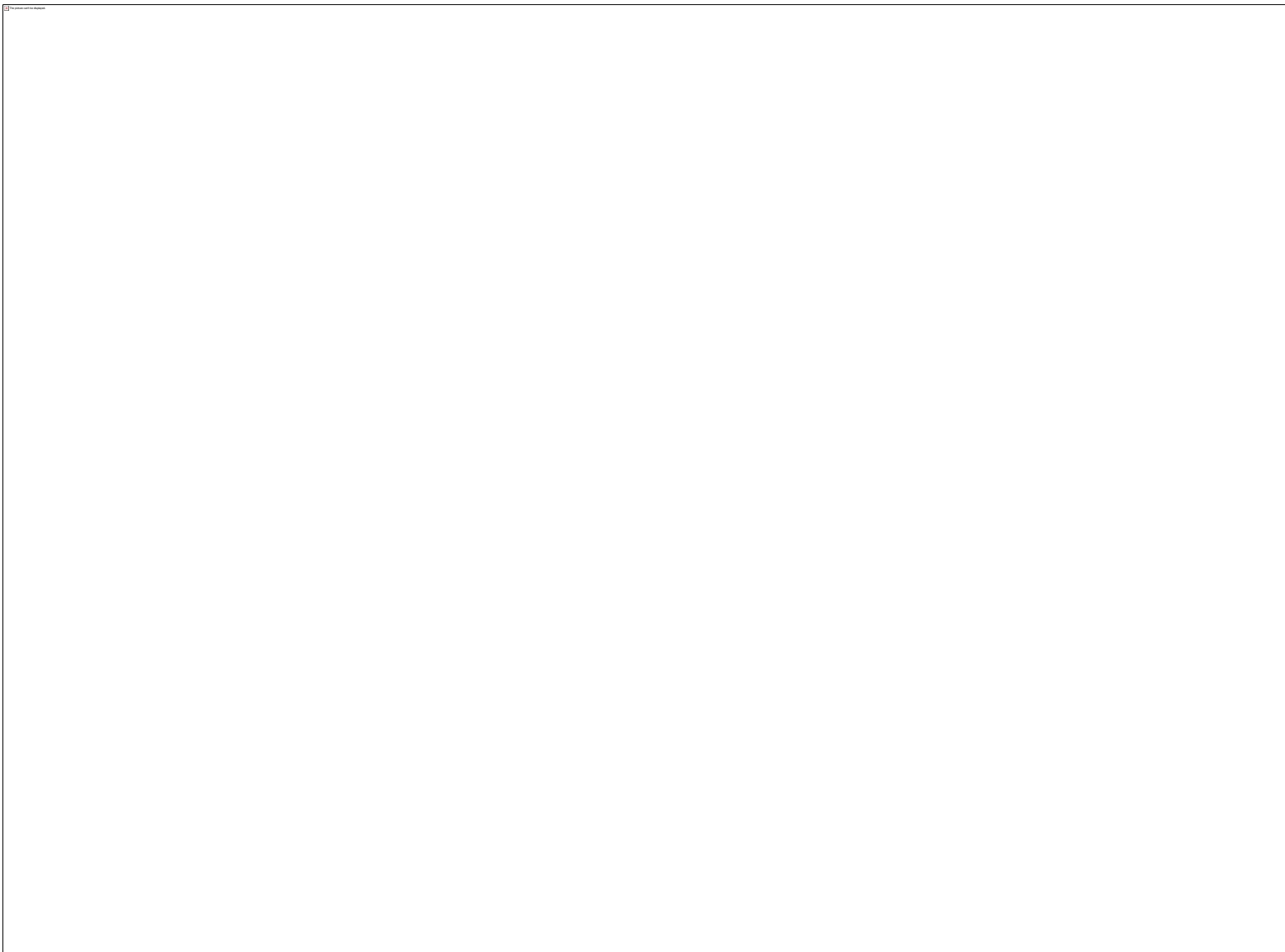


Method

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Results – Fatigue Risk



Results – Fatigue Risk

Table 3
Factor loadings on the Index of Fatigue Risk.

Item	Factor loadings
How many near-misses in the last month?	.76
Fatigue-related near misses in last month?	-.76
Do you ever get so tired it affects your ability to work safely?	.74
How many shifts in last week did you feel unable to work safely because of fatigue?	.65
I find coping with fatigue very difficult.	.60

Saved factor scores to data file as
Outcome Measure = Fatigue Risk.









Results - Napping





Results - Depression





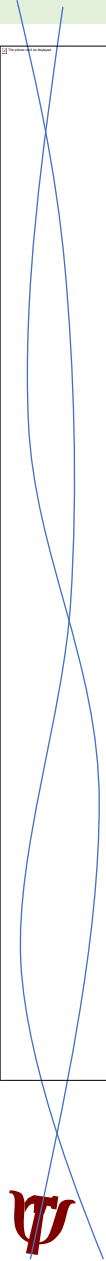
Results - Alcohol



Results – Predicting Fatigue Risk



Results – Predicting Fatigue Risk



Napping – a fatigue management strategy?

- Not as it is currently practiced – ie. tacit permission..
- In those conditions it seems more like an indicator of serious difficulty;
- Has some utility as a fall back position to prevent crisis;
- Don't lose sight of the fundamental obligations of "Fitness for Work".



Depression

- Understand the prevalence of the condition;
- Learn to recognise the symptoms;
- Treatable condition;
- If rates of depression are elevated – need to think through the level of demand in the operation or specific role;
 - Good indicator of “in over their head”;
 - Our experience, we have referred about 1 in 20 employees for treatment;
- Poor work performance? - generally there are good reasons and depression is a common explanation.



Alcohol

- Current procedures seem to regulate behaviour for rostered days, but not days off;
- Self-regulation is probably the key predictor in safety performance;
- Youth and inexperience plays an important role;
- Need for a better understanding of:
 - the role of individual regulatory mechanisms;
 - the role of self-regulation in safety performance;
 - organisational strategies for fostering increased self-regulation;



Predictive model

- Fatigue risk is predicted by a complex interaction of workplace and individual factors;
- Poor sleep and inadequate sleep seems the major issue followed by symptoms of depression
- Night shift, not a surprising result
 - quality and hours of sleep
 - arrangement of sleep/wake hours
- Results are a picture of how people cope under demanding conditions;



Conclusion

- Mining industry clearly a high demand environment;
- How organisations design that level of demand is clearly important for the level of organisational risk;
- How individuals cope within that high demand environment is clearly predictive of outcomes;
- Results are comment on how individuals cope in a high demand environment. It seems we are better are elevating the level of demand than improving individual coping strategies.

