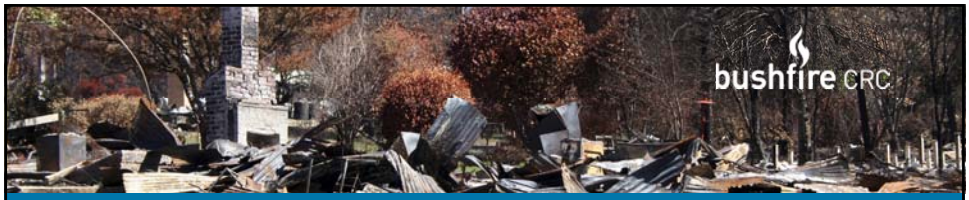
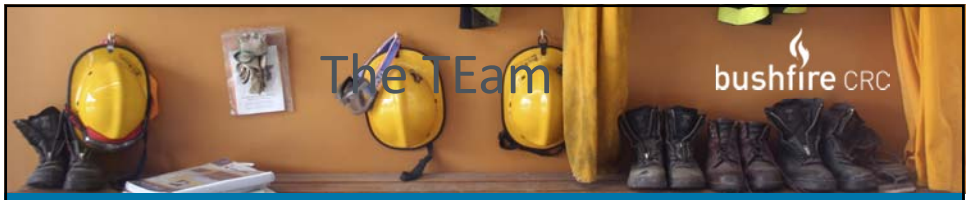


WHAT HAS A CONDOM TREE GOT TO DO WITH BUSH FIRES

Timothy Skinner
Rural Clinical School
University of Tasmania



HEALTH PSYCHOLOGIST

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ADHERENCE (% DAYS DRUG TAKEN) TO ORAL ANTIDIABETIC TREATMENT

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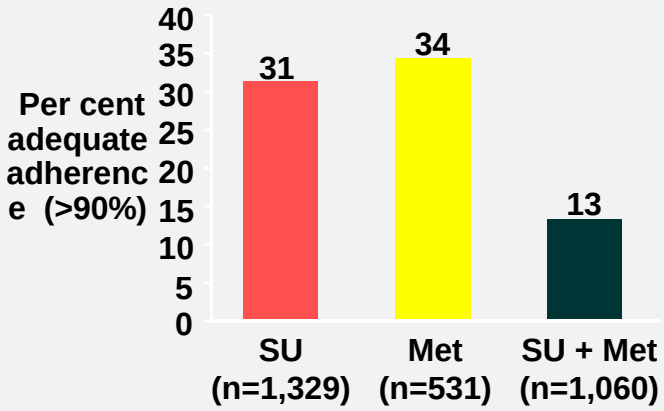
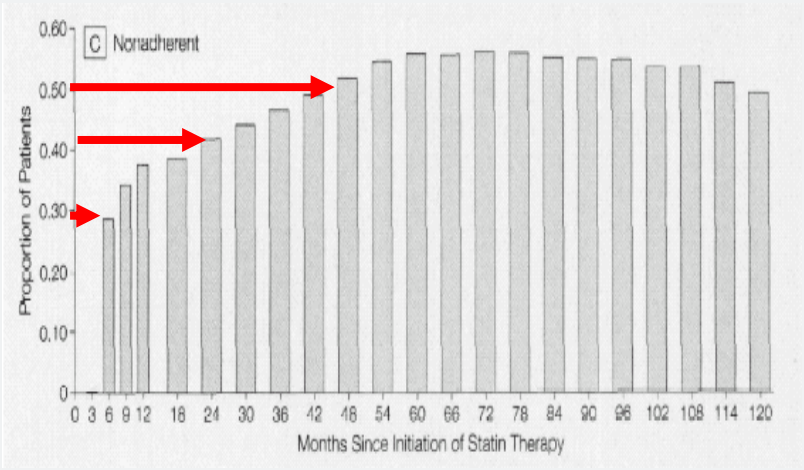


SU=sulphonylurea; Met=metformin

Adapted from Morris AD *et al. Diabetes* 2000;49.

% Patients Obtaining Less than 20% of Prescribed Medication



Benner et a. Long-term persistence in use of statin therapy in elderly patients. *JAMA;* Jul 24/Jul 31, 2002; 288, 4; pg. 455

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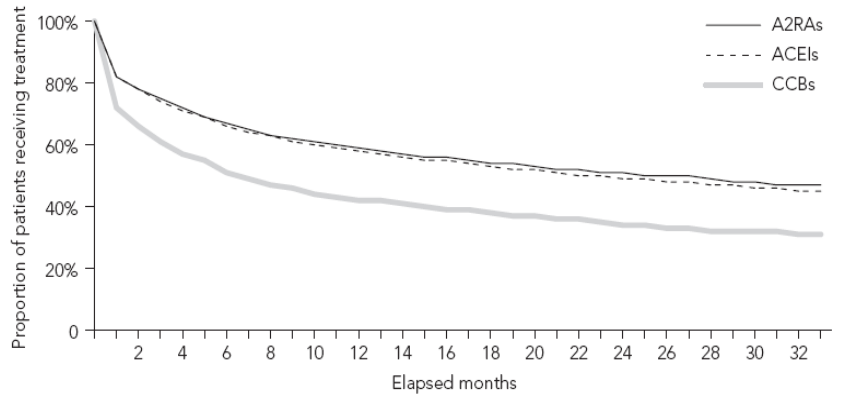
1 Persistence curves for the three main classes of antihypertensive drugs initiated in Australia, January 2004 to September 2006



* A2RA = angiotensin II receptor antagonist. ACEI = angiotensin-converting enzyme inhibitor. CCB = calcium channel blocker. ◆

MJA 2008; 188: 224–227

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1 in 4 prescriptions for oral contraceptive not presented to the dispensing pharmacist

18% renal transplant patients not taking medication as prescribed, 91% of these patients experienced organ rejection Vs 18% adherent

Obtained and prepared firefighting equipment (e.g. hoses and a pump).	26.5%
Obtained and prepared equipment such as ladders, buckets, and mops to put out spot fires.	20.0%
Have a water supply independent of the mains water supply.	32.8%
Have a pump with power source independent of mains.	19.5%
Have a generator.	26.5%
Have an evacuation route mapped out.	39.1%
Stored important documents and possessions off-site or in a fire safe compartment.	34.3%
Have an evacuation bag with personal documents (e.g. passport, birth certificate, deeds, etc.).	33.4%
Prepared a kit of personal protective clothing for each member of the household.	12.8%
Cleared leaves, twigs, and long grass for a distance of about 20-30m around the house.	73.5%
Removed bushes close to the house and cut back overhanging tree branches.	58.4%
Used landscaping or the layout of garden to reduce the fire risk.	51.1%
Moved combustible materials such as firewood and wooden garden furniture away from the house.	41.6%
Cleared gutters of leaves.	77.9%
Covered under-floor spaces to prevent embers and flames entering.	5.5%
Covered all gaps and vents to reduce the risk of embers entering the house or cavities	9.6%
Installed seals and/or draft protectors around the windows and doors.	12.7%
Installed a roof-mounted sprinkler system	5.3%
Installed a sprinkler system around the property.	24.5%
Maintained fire breaks.	54.4%
Conducted controlled burning.	19.4%
Discussed what you would do with all members of the household.	74.8%
Thought about what each person would need to do	59.0%
Considered how things could change if some members of the household were not at home	43.9%

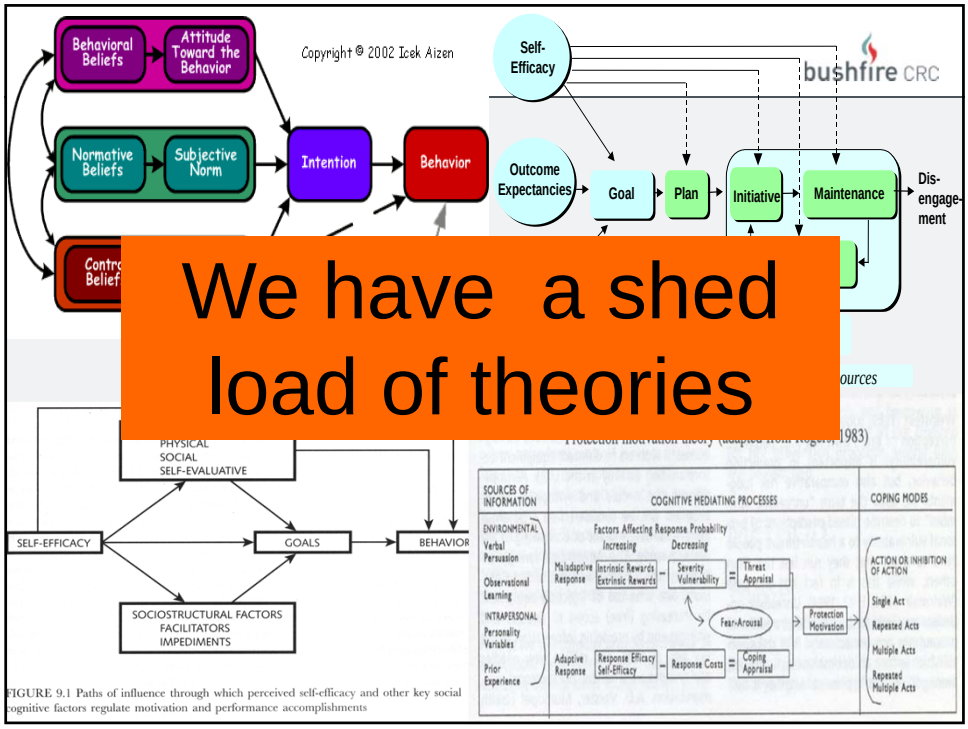

FIGURE 9.1 Paths of influence through which perceived self-efficacy and other key social cognitive factors regulate motivation and performance accomplishments

THEORY DRIVEN INTERVENTIONS WORK

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Author	Behavior	N_C	N_E	Effect size (*d*) Intention	Behavior
Ajzen (1971)	Prisoners dilemma	35	35	1.91**	2.23**
Basen-Engquist (1994)	Condom use	24	19	0.39*	−0.25
Beck & Lund (1981)	Use of dental tablets	40	40	0.56*	0.00[b]
Brubaker & Fowler (1990)	Testicular self-examination	29	59	1.54***	0.94*
Bryan, Aiken, & West (1996)	Condom use	41	42	1.16***	0.38*
Burgess & Wurtele (1998)	Parent-child communication	13	6	1.14***	2.31***
Caron, Godin, Otis, & Lambert (2004)	Condom use	159	147	0.54***	0.32**
Chatrou, Maes, Dusseldorp, & Seegers (1999)	Smoking	292	248	0.23**	0.02
Cody & Lee (1990)	Skin examination	90	108	0.53***	0.34*
Crawley & Koballa (1992)	Course enrollment	111	135	0.32*	0.20
D'Onofrio, Moskowitz, & Braverman (2002)	Smoking	557	557	0.12[a]	0.00[b]
Das, de Wit, & Stroebe (2003) Study 2	Course enrollment	55	56	1.44***	1.04***
Das, de Wit, & Stroebe (2003) Study 3	Course enrollment	59	59	0.59**	0.25*
Detweiler, Bedell, Salovey, Pronin, & Rothman (1999)	Sunscreen use	33	26	2.97***	0.68*
Dholakia & Bagozzi (2003) Study 2	Visiting an Internet site	74	74	1.27***	0.46*
Dukeshire (1995) Study 2B	Sunscreen use	51	51	1.03***	0.33*
Fitzgerald, Stanton, Terreri, Shipena, Xiaoming, Kahihuata, Ricardo, Galbraith, & DeJaeger (1999)	Contraceptive use	222	230	0.28	0.31*
Godin, Desharnais, Jobin, & Cook (1987)	Exercise	65	65	0.44*[ab]	0.29
Graham-Clarke & Oldenberg (1994)	Exercise	191	191	0.30*	0.00[b]
Hillhouse & Turrisi (2002)	Indoor tanning	53	53	0.58***	0.35*
Hine & Gifford (1991)	Donating behavior	49	55	0.60**	0.40*
Irvine, Ary, Grove, & Gilfillan-Morton (2004)	Low fat diet	234	229	0.32***	0.13
Jackson (1997)	Sun protective	65	73	0.64**	0.37*
Jemmott, Jemmott, & Fong (1998)	Sexual behavior	204	200	0.24*	0.11
Jones, Sinclair, & Courneya (2003)	Exercise	45	45	0.39*	0.03
Lescano (1998)	Sun protection	54	71	0.43*	−0.32
Lusczyzska & Schwarzer (2003)	Breast self-examination	173	244	0.55***	0.38**
Mahler, Fitzpatrick, Barker, & Lapin (1997)	Sun protection	17	29	0.73**	0.14
Mahler, Kulik, Gibbons, Gerrard, & Harrell (2003)	Sun protection	35	28	0.56*	0.00[b]
Main, Iverson, & McGloin (1994)	Sexual behavior	176	151	0.25*	0.15
Martinez (1999)	Condom use	35	88	0.40*	0.00[b]
Martinez, Levine, Martin, & Altman (1996)	Seat belt use	44	126	0.51**	0.24
Melendez, Hoffman, Exner, Leu, & Ehrhardt (2003)	Sexual behavior	116	109	0.72***	0.44**
Milne, Orbell, & Sheeran (2002)	Exercise	76	93	0.76***	0.11
Murphy & Brubaker (1990)	Testicular self-examination	49	50	0.96***	0.67**
Quine, Rutter, & Arnold (2001)	Cycle helmet use	49	48	0.57*	0.70***
Sanderson & Jemmott (1996)	Condom use	47	86	0.65**	0.22
Sheeran, Webb, & Gollwitzer (2003)	Study behavior	39	46	1.96***	0.66**
Slonim-Nevo, Auslander, Ozawa, & Jung (1996)	AIDS-risk behavior	58	25	0.45*	0.27
Stanton, Li, Ricardo, Galbraith, Feigelman, & Kaljee (1996)	Condom use	39	40	0.39**	0.16
Steffen, Sternberg, Teegarden, & Shepherd (1994)	Testicular self-examination	138	139	0.48***	0.48***
Sutton & Hallet (1988) Study 1	Smoking	44	33	0.39[a]	0.48*
Sutton & Hallet (1988) Study 2	Smoking	46	50	0.26[a]	0.21
Tesar (1996)	HIV-preventive behavior	74	170	0.30*	0.23
Thompson, Kyle, Swan, Thomas, & Vrungos (2002)	Condom use	17	16	0.50**	0.81*
Wurtele (1988)	Calcium intake	40	40	0.75***	0.73***
Wurtele & Maddux (1987)	Exercise	80	80	0.75***	0.30

Authors	Determinants of health behaviour					
	Self-efficacy	**Outcome expectancies, normative influences and threat**			**Intention**	**Post-intentional factors**
(Abraham et al., 2000)	*Self-efficacy*	*Attitudes* Affect & Evaluation	*Norms* Injunctive (inward) & descriptive (outward: group)	*Self-representations* Self-evaluative expectations, social identity	*Intention*	
(Bandura, 1998)	*Self-efficacy*	*Physical*	*Social*	*Self-evaluative*	*Goals: proximal and distal*	*Impediments* Personal, situational and due to health system
(Noar et al., 2004)	*Self-efficacy*	*Attitudinal beliefs* Appraisal of the positive and negative aspects of the behaviour and expected outcome of the behaviour	*Normative beliefs* Beliefs that other want you to engage in the behaviour; support of others	*Risk-related beliefs and emotional responses* Beliefs that the consequences of non engagement may be severe, may include experiencing of negative emotions	*Intention/commitment/ planning* Intending or planning to perform the behaviour	
(Conner et al., 2005)	*Self-efficacy, behavioural control*	*Perceived consequences* Benefits and costs of behaviour	*Normative influences* Social influences, cues of action	*Threat* Perceived susceptibility and severity	*Intention*	*Self-regulation skills*
(Weinstein, 1993)	*Self-efficacy*	*Probability* that consequence will occur *Perceived cost and barriers of action*	*Normative beliefs Perceived value of non health outcome*	*Susceptibility Severity Effectiveness of precaution Perceived internal & external rewards from current behaviour*	*Motivation to comply*	

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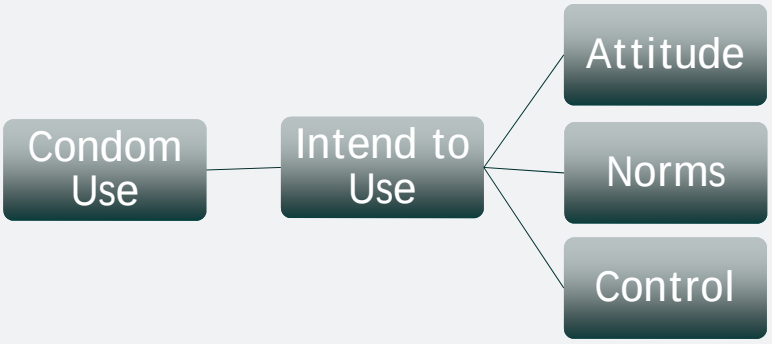

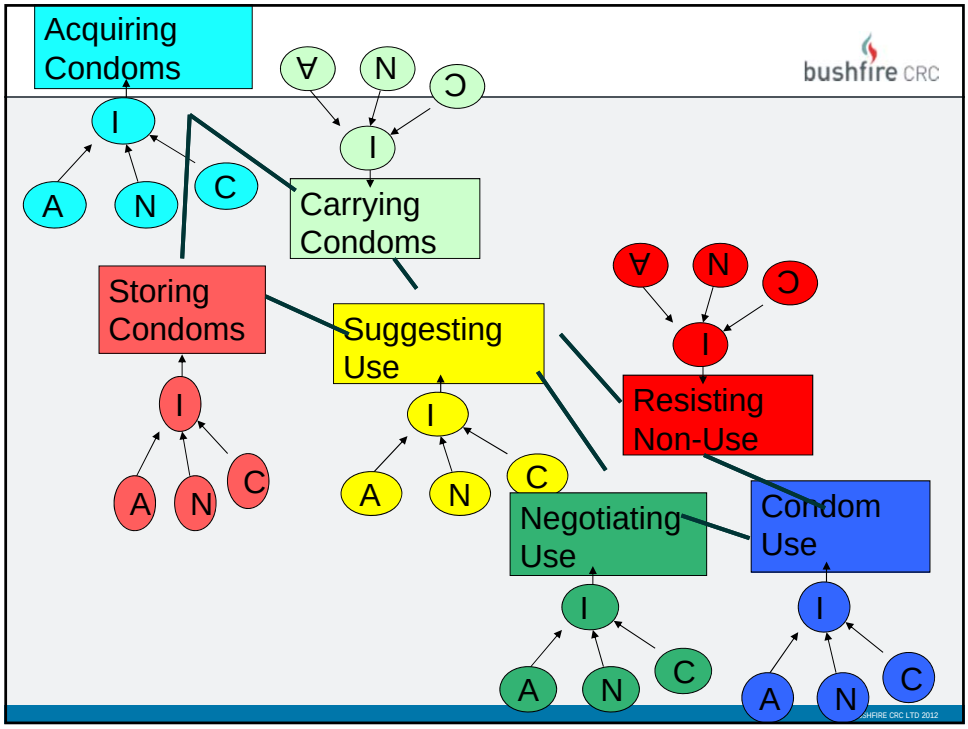
Acquiring Condoms
Carrying Condoms
Storing Condoms
Suggesting Use
Resisting Non-Use
Negotiating Use
Condom Use
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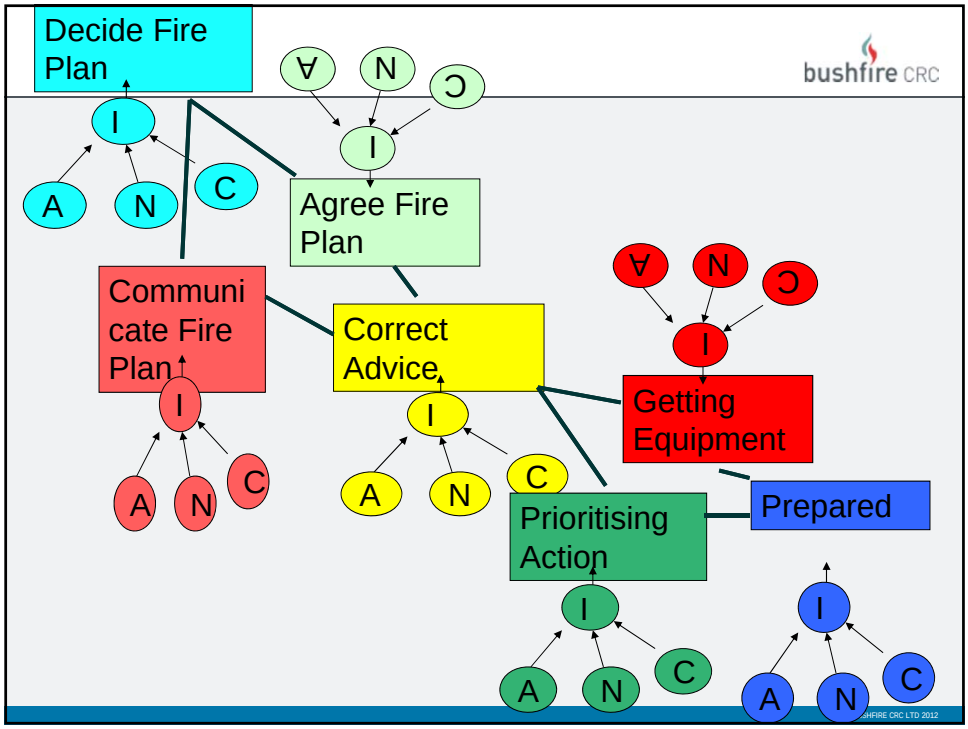
Decide Fire Plan
Agree Fire Plan
Communicate Fire Plan
Correct Advice
Getting Equipment
Prioritising Action
Prepared
bushfire CRC

Different Fire Plans – Different Preparation ?

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	N (%) T1	N (%) T2
1. Stay and try to protect your property throughout the fire	22.9%	22.8%
2. Do as much as possible to protect your property but leave if the fire directly threatens it/reaches your property.	41.0%	47.1%
3. Wait to see what the fire is like before deciding whether to stay and defend or leave.	19.1%	11.6%
4. Wait for police, fire or other emergency services to tell you what to do on the day.	8.0%	8.5%
5. Leave as soon as you know there is a fire threatening your town or suburb.	5.9%	6.3%
6. You would not be at home because you intend to leave your property and stay somewhere else on days of extreme and catastrophic fire danger.	0%	1.1%
7. Haven't thought about it.	2.1%	.5%
8. Other (please specify): …	1.1%	2.1%

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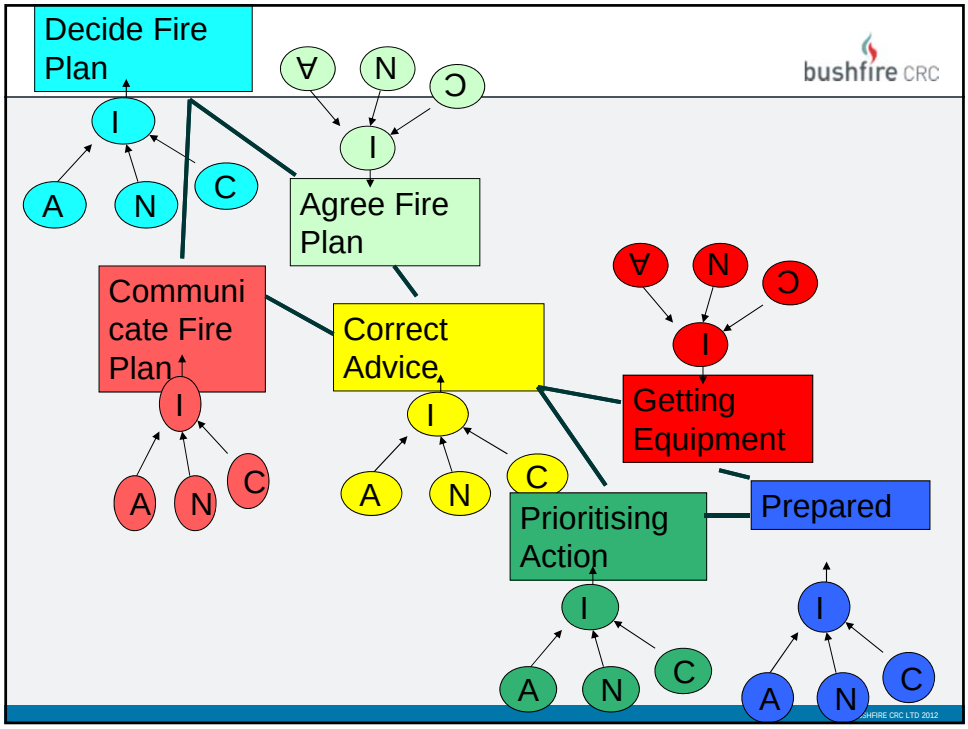
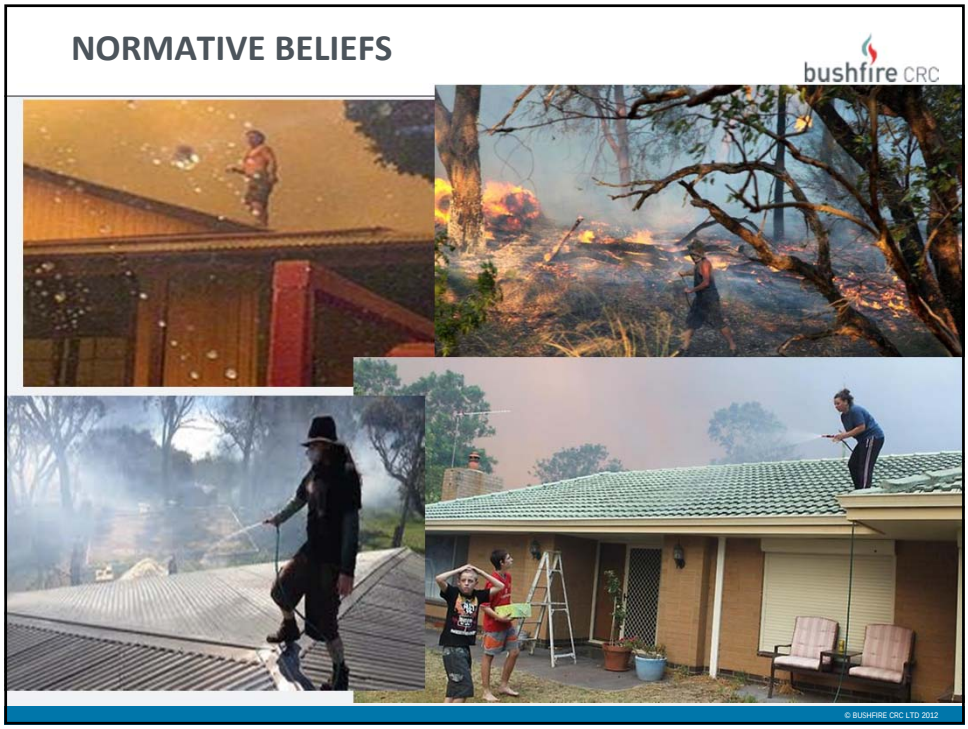
Defense items	
	Obtained and prepared firefighting equipment (e.g. hoses and a pump).
	Obtained and prepared equipment such as ladders, buckets, and mops to put out spot fires.
	Have a water supply independent of the mains water supply.
	Have a pump with power source independent of mains.
	Have a generator.
Evacuation items	
	Have an evacuation route mapped out.
	Stored important documents and possessions off-site or in a fire safe compartment.
	Have an evacuation bag with personal documents (e.g. passport, birth certificate, deeds, etc.).
	Prepared a kit of personal protective clothing for each member of the household.
Resilience items	
	Cleared leaves, twigs, and long grass for a distance of about 20-30m around the house.
	Removed bushes close to the house and cut back overhanging tree branches.
	Moved combustible materials such as firewood and wooden garden furniture away from the house.
	Cleared gutters of leaves.
	Covered under-floor spaces to prevent embers and flames entering.
	Installed a roof-mounted sprinkler system
	Maintained fire breaks.
Planning items	
	Discussed what you would do with all members of the household.
	Thought about what each person would need to do
	Considered how things could change if some members of the household were not at home during a fire.
	Written down important things to do and remember.


Decide Fire Plan
I
A
N
C
Agree Fire Plan
Communicate Fire Plan
Correct Advice
Getting Equipment
Prepared
Prioritising Action
bushfire CRC


NORMATIVE BELIEFS
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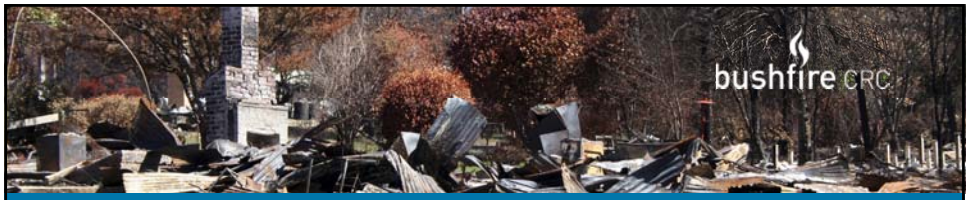

Normative beliefs are determined by availability of models, so need to consider what is modeled in media

ATTITUDES

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- Importance
  - Seriousness
  - Vulnerability
- Outcomes
  - Action Outcome
  - Non-Action Outcomes
- Barriers
  - Cost
  - Difficulty

IMPORTANCE / MOTIVATION

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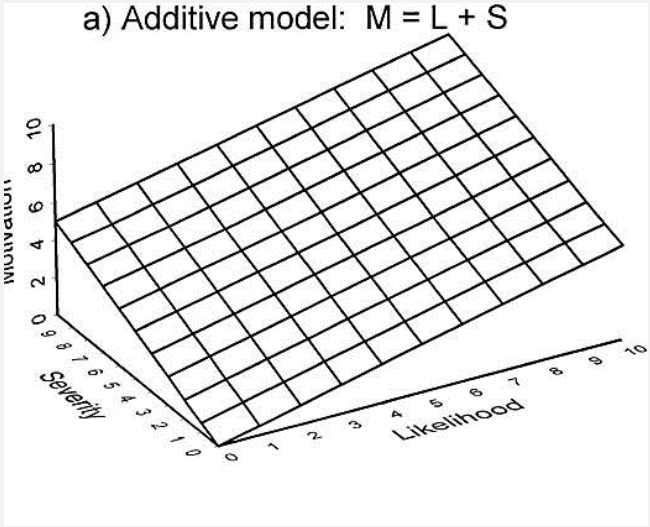
a) Additive model: M = L + S



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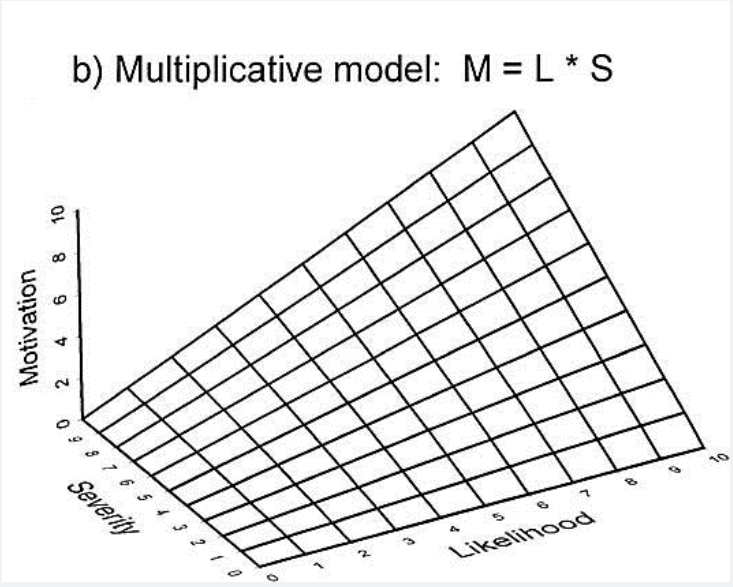
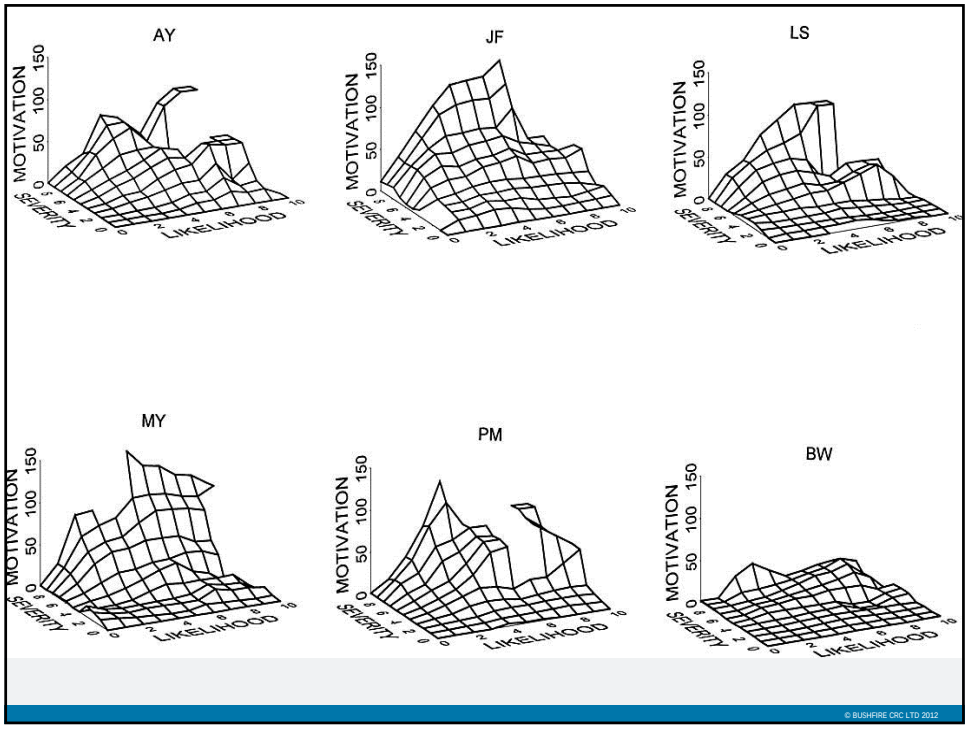
b) Multiplicative model: M = L * S




AY
JF
LS
MY
PM
BW
MOTIVATION
SEVERITY
LIKELIHOOD
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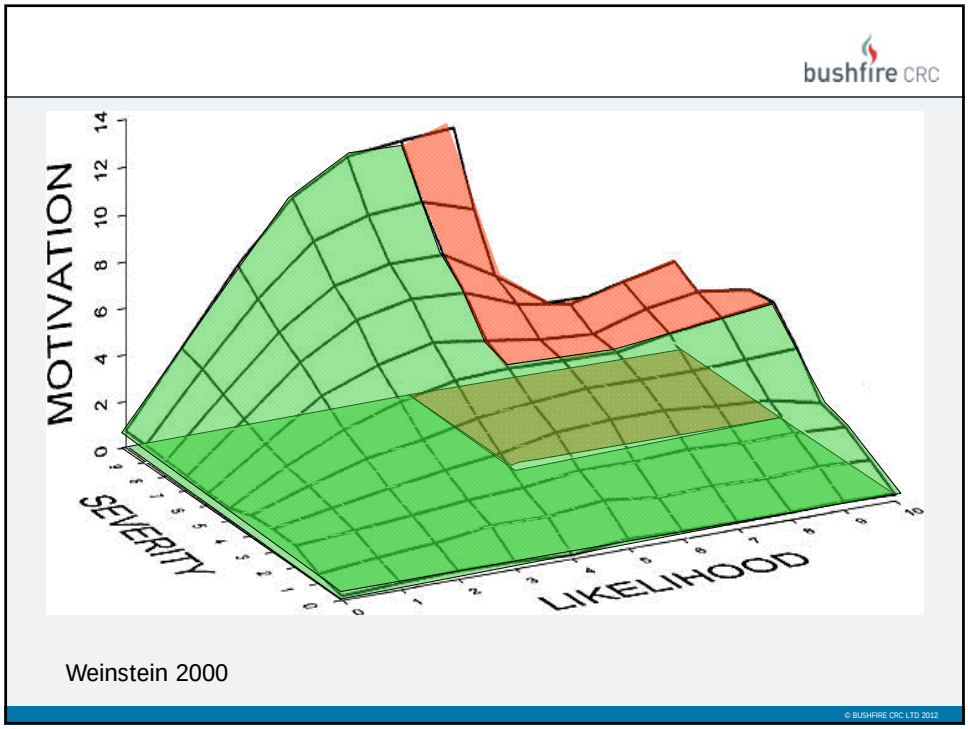
bushfire CRC
MOTIVATION
SEVERITY
LIKELIHOOD
Weinstein 2000
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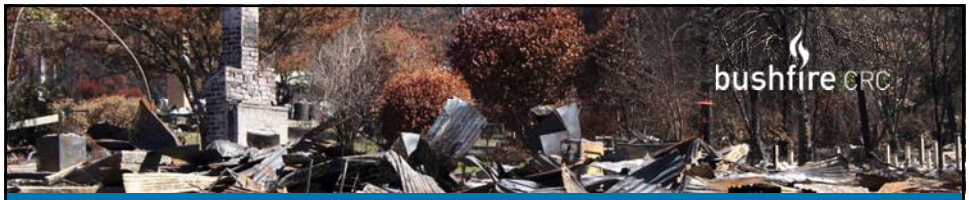
PREDICTING PREPAREDNESS

Between Subjects Factors	Defense Preparation B (SE)	β	Evacuation Preparation B (SE)	β	House Resilience B (SE)	β	Planning B (SE)	β
Gender (0=F 1=M)	.08 (.02)	.13***	.03 (.02)	.05	.02 (.01)	.05	.07 (.03)	.10**
Age	.02 (.01)	.09**	.04 (.01)	.15***	.02 (.01)	.12***	.03 (.01)	.11**
Risk Likelihood	**.01 (.01)**	**.03**	**-.02 (.02)**	**-.04**	**.00 (.01)**	**-.02**	**-.02 (.02)**	**-.03**
Risk Severity	**.07 (.02)**	**.18*** **	**.10 (.02)**	**.27*** **	**.05 (.01)**	**.23*** **	**.10 (.02)**	**.23*** **
Warning Reliability	-.01 (.01)	-.03	-.01 (.01)	-.05	**-.02 (.01)**	**-.11****	-.01 (.01)	-.05



Increasing the perceptions of likelihood of fire not likely to increase to preparedness

Increasing perceptions of severity of fire might increase preparedness

LOSS OF SERVICES

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	No	Yes
Electricity Supply	12%	87%
Water Supply	50%	44%
Phone Landline	27%	71%
Mobile Phone	79%	16%
Internet	27%	64%

Percentages of residents that expected to lose services during a fire

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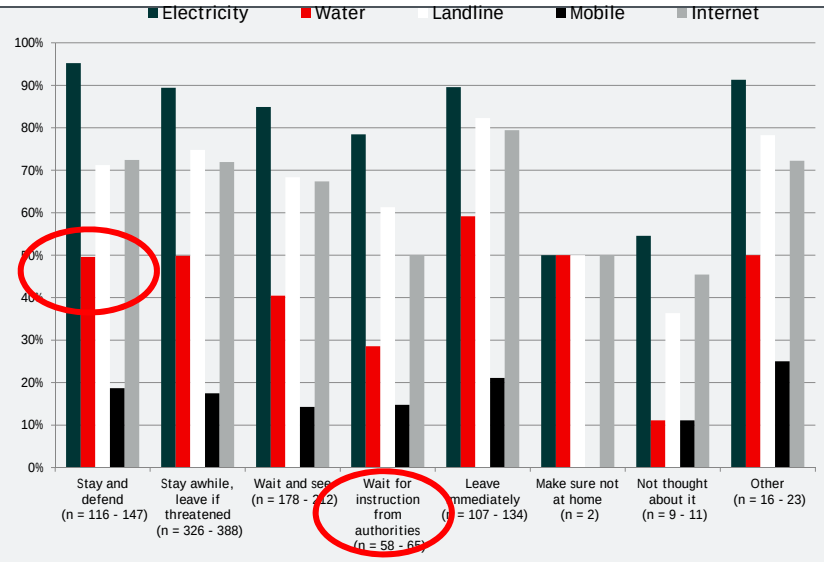

PREDICTING PREPAREDNESS

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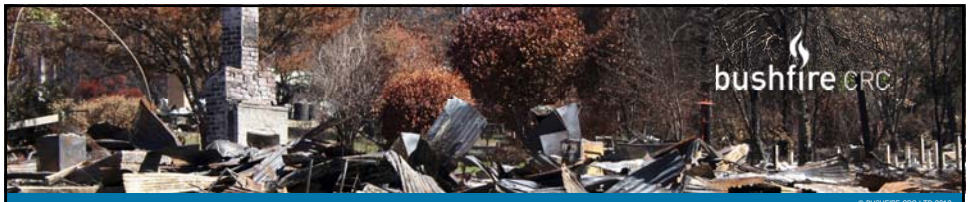
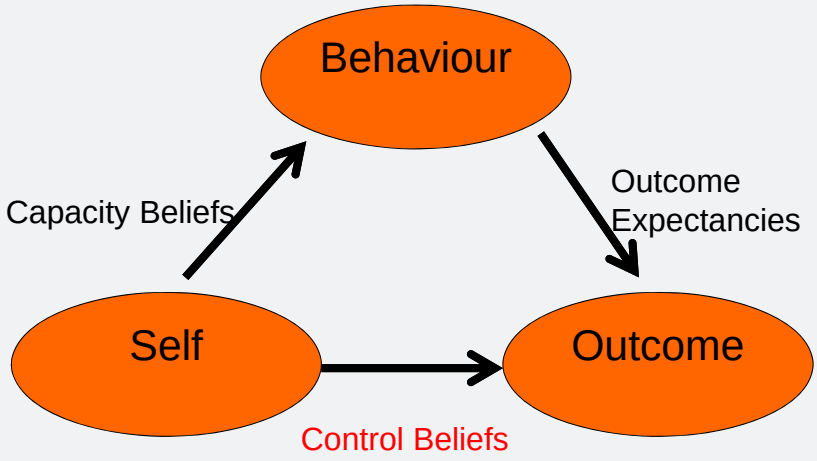
Between Subjects Factors	Defense Preparation		Evacuation Preparation		House Resilience		Planning	
	B (SE)	β	B (SE)	β	B (SE)	β	B (SE)	β
Lose Water (No vs. Yes)	**-.06 (.02)**	**-.09****	**-.05 (.02)**	**-.08***	**-.03 (.01)**	**-.08***	**-.11 (.03)**	**-.15*****
Lose Electricity (No vs. Yes)	-.04 (.03)	-.04	-.06 (.03)	-.06	-.07 (.02)	-.11**	-.06 (.04)	-.06
Lose Mobile (No vs. Yes)	-.03 (.03)	-.04	**-.08 (.03)**	**-.10****	**-.04 (.02)**	**-.09***	-.03 (.04)	-.03
Lose Water (NA vs. Yes)	.20 (.05)	.15***	-.08 (.05)	-.06	-.04 (.03)	-.04	-.02 (.06)	-.01



Increasing the perceptions that people could lose services may increase preparedness or may prompt change in fire plan

CONTROL / CAPACITY BELIEFS



PREDICTING PREPAREDNESS

Between Subjects Factors	Defense Preparation B (SE)	Defense Preparation β	Evacuation Preparation B (SE)	Evacuation Preparation β	House Resilience B (SE)	House Resilience β	Planning B (SE)	Planning β
Gender (0=F 1=M)	.08 (.02)	.13***	.03 (.02)	.05	.02 (.01)	.05	.07 (.03)	.10**
Age	.02 (.01)	.09**	.04 (.01)	.15***	.02 (.01)	.12***	.03 (.01)	.11**
Risk Likelihood	.01 (.01)	.03	-.02 (.02)	-.04	.00 (.01)	-.02	-.02 (.02)	-.03
Risk Severity	.07 (.02)	.18***	.10 (.02)	.27***	.05 (.01)	.23***	.10 (.02)	.23***
Protection Responsibility	.02 (.01)	.05	**.03 (.01)**	**.08***	.01 (.01)	.05	**.05 (.02)**	**.09****
Warning Reliability	-.01 (.01)	-.03	-.01 (.01)	-.05	-.02 (.01)	-.11**	-.01 (.01)	-.05

Clarifying responsibilities may improve some preparedness behavious

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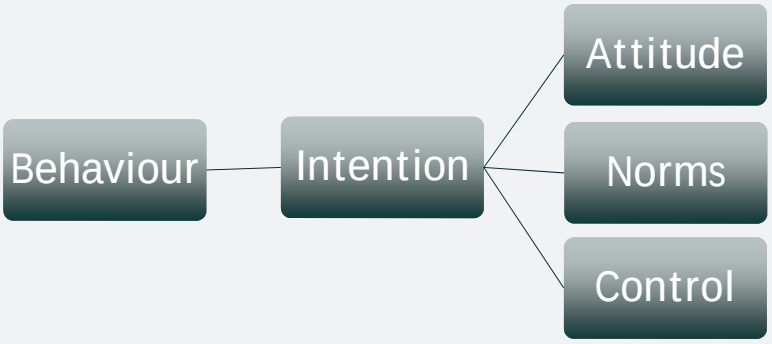

IMPLEMENTATION INTENTIONS

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The more you can get an individual to articulate when, where, how they will do something the more likely they are to do

bushfire CRC

Health Psychol. 2007 Jul;26(4):507-12.

DESIGN:

Fifty-five overweight or obese women (ages 18 to 76 years; body mass index from 25.28 to 48.33) enrolled in a commercial weight reduction program were randomly assigned to either an implementation intention prompt or a control condition. Data were collected twice, with a time gap of 2 months.

MAIN OUTCOME MEASURES:

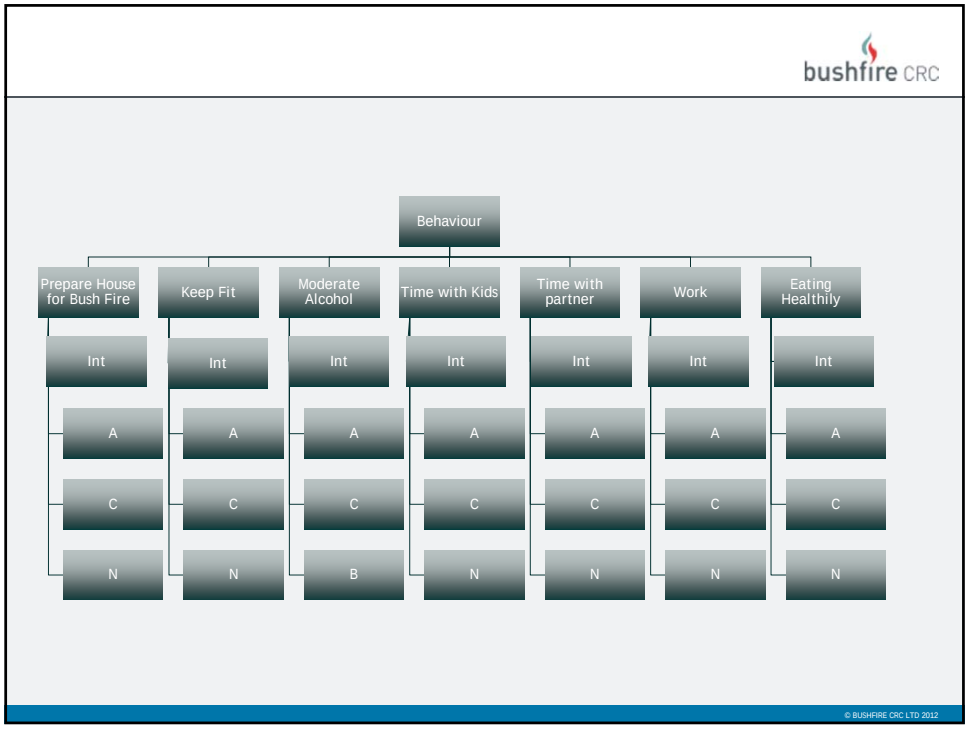
The primary outcome was participants' change in weight and body mass index from preintervention to follow-up.

RESULTS:

Repeated measures analysis of variance revealed a significant Time = Condition interaction: On average, implementation intention prompt participants lost 4.2 kg (95% confidence interval = 3.19, 5.07), whereas control participants lost 2.1 kg (95% confidence interval = 1.11, 3.09). The change in frequency of planning mediated the effects of the intervention on weight and body mass index change.

CONCLUSION:

Among obese or overweight women participating in a commercial weight loss program, those who learn to form implementation intentions can achieve greater weight reduction. Planning facilitation is a key mechanism explaining enhanced weight loss generated by implementation intention formation.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Behaviour
Prepare House for Bush Fire
Keep Fit
Moderate Alcohol
Time with Kids
Time with partner
Work
Eating Healthily
Int
A
C
N
B
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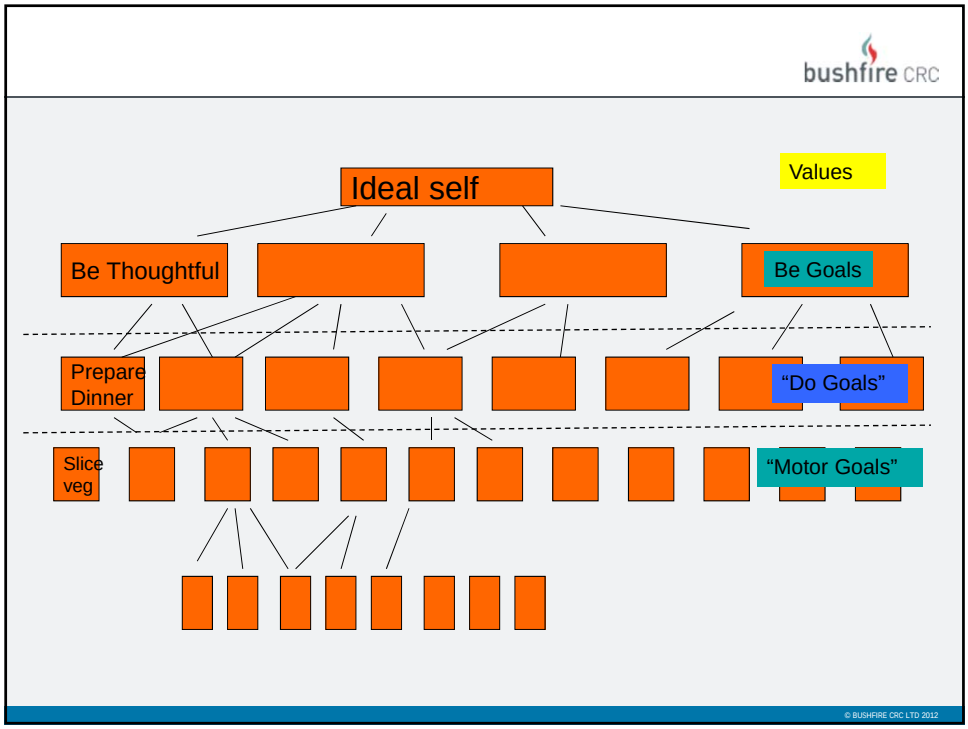
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Values
Ideal self
Be Thoughtful
Be Goals
Prepare Dinner
"Do Goals"
Slice veg
"Motor Goals"
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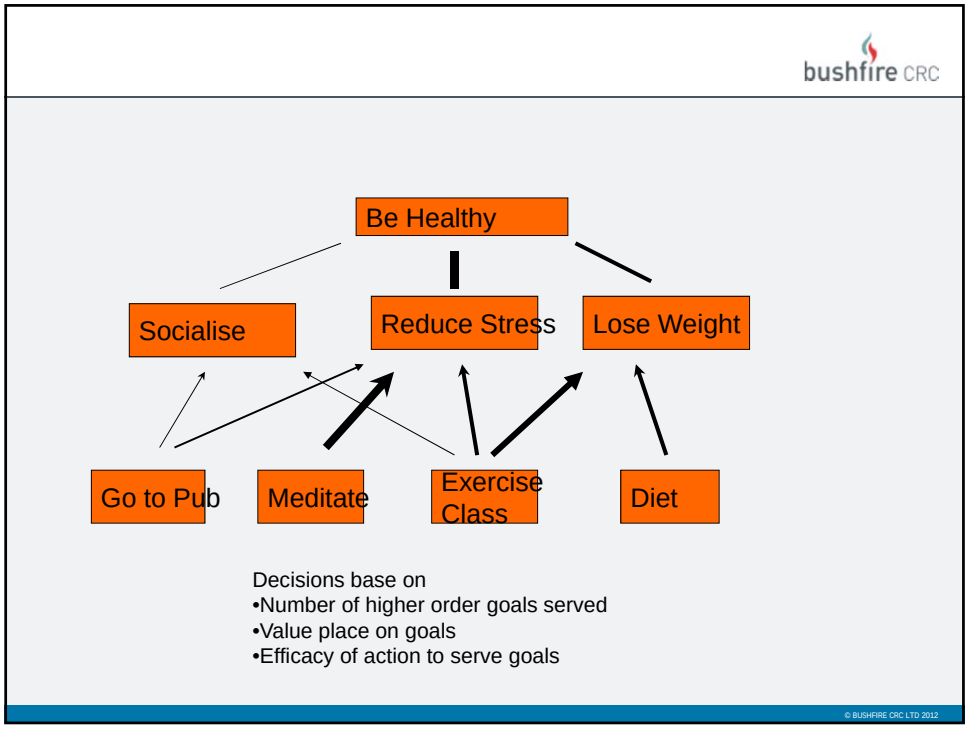
Be Healthy
Socialise
Reduce Stress
Lose Weight
Go to Pub
Meditate
Exercise Class
Diet
Decisions base on
•Number of higher order goals served
•Value place on goals
•Efficacy of action to serve goals
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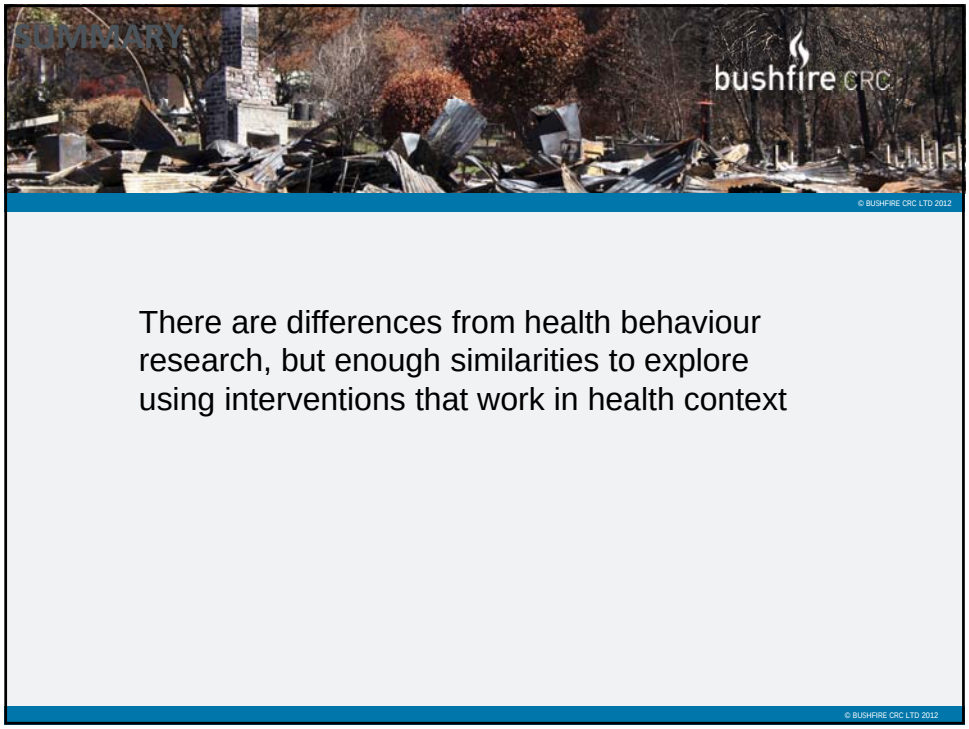
SUMMARY
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There are differences from health behaviour research, but enough similarities to explore using interventions that work in health context
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