# Fiery Women – Consulting, Designing, Delivering and Evaluating Pilot Women's Bushfire Safety Skills Workshops

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## Introduction

There were several sources for the idea of providing a bushfire safety intervention which targeted women. One was recognition of the Wangary fire fatalities. Of the nine civilian casualties in the Wangary Fire, seven were women and children (three women and four children). Eight of the nine casualties died in or near their cars. One woman died while sheltering in her bath (Deputy State Coroner 2007). There were conversations in formal and informal settings – discussions within brigades observed by the Fire Prevention Officer, about the absence of men from homes at critical times in a fire; observations by men and women about women's knowledge gap with regards to fire fighting skills; groups of women convened for "Women Continuing to Improve the Odds" days on Lower Eyre Peninsula, who discussed these issues; [4] observations by authors while they carried out other related programs, such as the Lower Eyre Peninsula Bushfire Recovery Program.

These observations were also highlighted in subsequent research into the Wangary Fire (2005) by Bushfire Cooperative Research Centre (CRC) some of which suggested women warranted targeting for bushfire safety information[5] (Rhodes 2005; Goodman, Healey & Boulet 2007; Haynes 2007; Proudley 2007, 2008; Goodman & Proudley 2008; Rhodes & Goodman 2006). Proudley (2007, 2008), noted the absence of those with fire fighting skills (generally men) from the home at the time of the fire[6] and emphasised roles women play within the family where crucial decisions are made in advance of and during a bushfire. Many in the Wangary community took action contrary to "Stay and Defend or Leave Early" advice, and Rhodes (2005) reported that of those who left their property, 81% left late.

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[4] Three "Women Improving the Odds" and "Women Continuing to Improve the Odds" days were convened from 2005-2007 as part of the recovery program by Department for Families and Communities (DFC).
[5] Jenny Filmer, Rural Fire Service (RFS), in NSW, used to offer "Fire Fighting for Non Fire Fighting Women", as a one day workshop. In WA, fire training for women is offered by Fire and Emergency Services Authority (FESA) also as a one day course.
6 She also found clear differences in opinions within the households regarding staying or going.

## *Gender*

The limited gender research in Australia in disaster contexts demonstrates differences in risk perception, risk exposure and risk handling. Gender differences are generally regarded as socially produced (Gustafson, 1998). Much of the literature suggests that women perceive disaster events more serious and risky, especially if it threatens their family members, and this relates to their social roles, activities and context (Enarson 1998; Gustafson 1998).

Beringer (2000) and Gilbert (2004) found gender differences in bushfire knowledge. Men tend to have a better understanding of bushfire behaviour. Emergency management remains a masculine field (Enarson 2003; Childs 2007; Proudley 2008). Generally, women tend to be involved in local grassroots organisations working on community disaster issues and less in the more formal, emergency organisations. Women become active in these informal groups through female friendship networks. Overall, research and practice has pointed to how women's communication skills make them critical integrators of families, extended household and neighbourhood in disaster contexts (Enarson 1998).

Beringer (ibid.) suggested that a lack of knowledge may lead to women perceiving bushfire to be a greater threat. Limited knowledge may also create greater stress and anxiety when a fire does occur. Gilbert (2004) noted that in many cases women admitted they relied on the knowledge of their partners.

Women are more likely to evacuate, but not without their children. Women are more likely to consult with neighbours, friends and relatives in the evacuation decision, and this may help to hasten evacuation. However, it is also apparent that men's preferences re 'staying' or 'going' has the strongest influence on family decisions (Enarson 1998; Proudley 2007; women workshop attendees pers. comm.).

In an assessment of bushfire casualties (Haynes 2007) found:

- The number of women dying in fires has increased over the last 30 years
- Late evacuations still accounts for most deaths.

Families with young children and younger people (<40 years) are more likely to evacuate because of young children and/or lack of bushfire experience (Beringer 2000). A large proportion of people intending to stay were male (67%) (Beringer ibid.). The tendency of women to evacuate with dependents may put them at greater risk due to lack of knowledge.

Numerous studies have shown that of those who decide to 'Stay & Defend', many were not committed and were likely to leave at some stage during the fire despite the intention of staying (Bushnell, ibid.). Those 'uncommitted' suffered stress from the experience of being alone, or lacked confidence, or realised they were not prepared (Bushnell ibid.).

## *Risk Perception*

Perception of risk and vulnerability is linked to preparedness (Beringer 2000; Odgers & Rhodes 2002; Anderson-Berry 2003; McCaffrey 2004; cited in Bushnell and Cottrell 2007). Those who perceive the risk are more likely to take preparedness actions and to seek further information. Level of risk

perception has been found to be influenced by awareness raising programs (Rohrmann 2000; Anderson-Berry 2003 cited in Bushnell and Cottrell ibid.). A number of authors have attributed a high level of risk perception in those with good bushfire knowledge, past bushfire experience and a close association with local bushfire brigades.

Experience with bushfire smoke was correlated with increased awareness and interest in learning more about fire management (McCaffrey 2004 in Bushnell, ibid.). Indirect experiences were more influential in risk awareness. A single experience can be limited and biased. Repeated experiences can lead to people being used to the hazard and not perceiving it to be a great risk (Bushnell et al. ibid.). Risk perception may also change over time, with an attrition of risk perception and knowledge (Bushnell ibid.; Smith 2005). While acknowledging the above, an event such as the Wangary Fire provided opportunities to build on risk perception through increasing people's opportunities to review their learning.

### *Adult Learning*

Adults seek out learning experiences in order to cope with specific life-changing events (Zemke 1984). Adults motivated to seek out a learning experience do so primarily because they have a use for the knowledge or skills being sought. Learning is a means to an end (Zemke ibid.; Paton 2006).

Education programs offered by fire agencies highlight bushfire risk with the intent to galvanise individuals and communities into action. Education delivery methods range from raising awareness through to formal training (Figure 1). Most bushfire community education programs offer informal awareness raising and information to local groups with the aim to empower the community in the long term (Gilbert 2007). Few fire agencies offer community competency skills based fire training[7].

[7] Exceptions include Community Fire Unit Training (offered in New South Wales and in the Australian Capital Territory), of 20 hours duration, with ongoing annual training. See also Lowe et al. (2008).

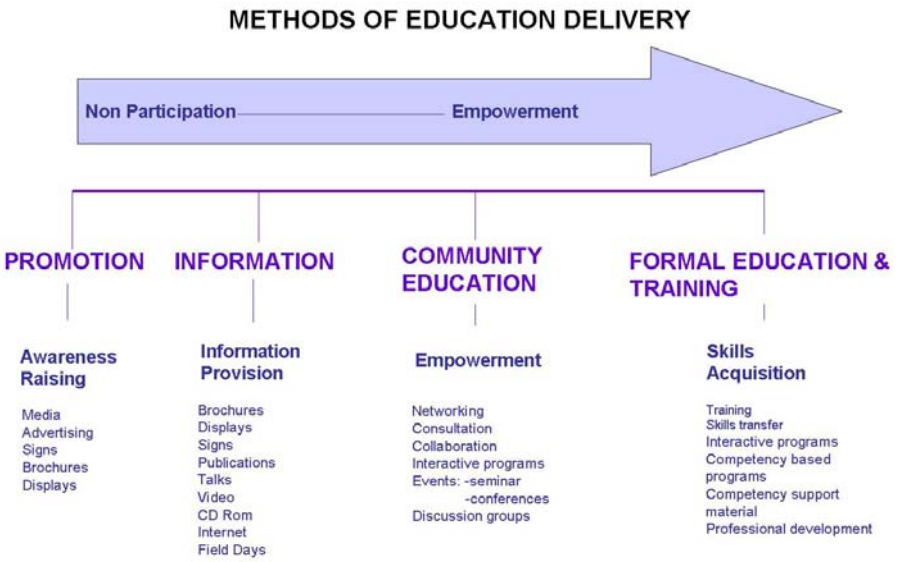



**Figure 1 Education Delivery Methods (adapted from CFS Community Education Unit 2008.)**

## *Managing Anxiety*

In acquiring a new skill, learners go through a number of steps (Figure 2) requiring practice until learners become "unconsciously competent". This concept is relevant on two levels. Firstly, all learners will be moving through these steps. Secondly, this principle is relevant in managing tasks in a stressful situation, such as a bushfire, when a written and ***practiced*** bushfire action plan can help prevent panic (J Hamilton, [Central Psychology Services] pers. comm. March, 2008). Providing materials to assist the community in being mentally prepared for bushfires fills an identified gap[8] in community bushfire education (Tibbits et al. 2007). Being psychologically ready is a critical element of survival.

[8] A training resource "Awareness, Endurance and Recovery," (Reser & Morrissey 2007), was developed for community leaders to assist them to cope with the psychological effects of cyclones and could be readily adapted for bushfires. Other fire agency programs recognise the importance of mental preparation, and cover it in their sessions, but there is limited material developed to extend these concepts.

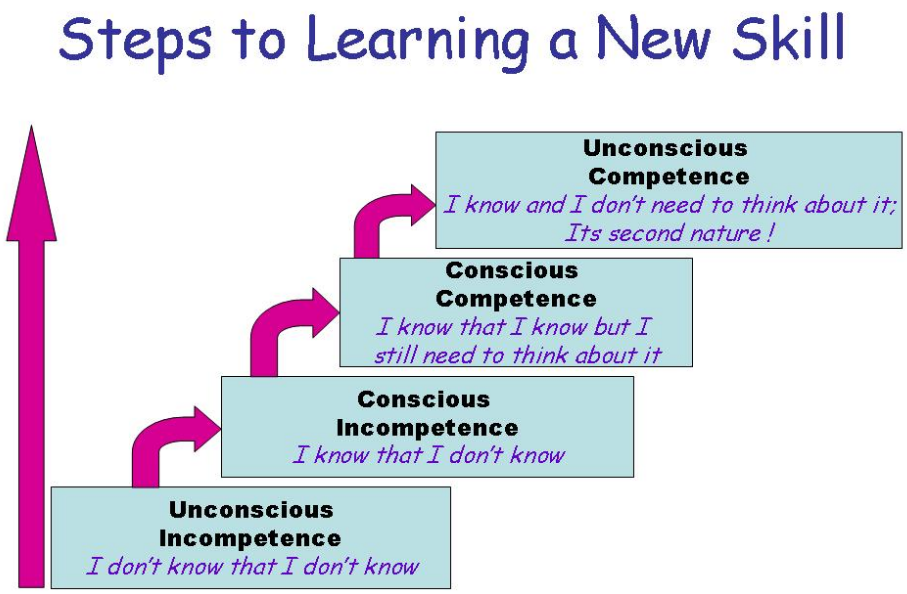



**Figure 2 Steps in Learning a New Skill (adapted from Hamilton, 2008)**

### *Locus of Control*

Locus of control relates to people's beliefs as to whether their actions will assist them to have control over what happens to them. People with an internal locus of control are more likely to prepare, as consequences can be influenced by personal actions. Those with an external locus believe that fate or chance has the most influence on outcomes and are less likely to prepare. Risk communication must focus on differentiating between an uncontrollable event (bushfires) from controllable consequences (Paton 2006).

### *Bushfire Survival Strategies*

Tibbits (ibid.) concludes that empowering people to decide whether to prepare stay and defend or leave early, provided they act on their decision, is probably the single most important strategy for protecting people and property in bushfires.

Inter-agency Collaboration

Funding from Emergency Management Australia enabled an inter-agency team to pilot a women's basic bushfire safety skills program on Lower Eyre Peninsula. Preventing late evacuation was a key aim of the project.

## Methods

### *Survey*

682 surveys were posted or hand delivered to women's groups and organisations on Lower Eyre Peninsula. A range of information was sought from the women regarding their interest in bushfire education and workshop content.

## *Consultation*

Women's groups were consulted as to the design and content of a basic bushfire skills program. Nine consultative meetings were held, including three indigenous meetings with over 80 women consulted. Two reference group meetings were held, with 20 attending.

## *Workshop Content*

Content was based around units of competency in the Public Safety Training Package PAU00. Elements 'Prevent Injury, Suppress Wildfire and Operating Pumps and Fire Fighting Equipment' were incorporated. Content was also adopted from SA CFS Community Fire Safe Program, Fire Training Courses (Basic Fire Fighting One and Wildfire Suppression), literature and survey results.

Importantly, a number of new resources were developed. One major inclusion was emotional preparedness, developed by Consulting Psychologist, Jo-Anne Hamilton.

The workshops combined discussion, practicals and scenario exercises in a supportive environment. Workshop folders and notes were presented to all participants.

## *Workshop Delivery*

A series of three consecutive workshops were offered at four locations. An additional fourth workshop was held to meet specific needs (Table 1). Most workshops were offered during school hours. Weekends and evenings were also included. Advertising was minimal as there was potential to be unable to service the demand. Workshops were advertised via an article in the local newspaper and by invitation to survey respondents. Considerable interest in the workshops meant that more workshops were held than originally planned. Queries were obtained from women outside the project area.

**Table 1 Workshop Content Summary**

| Title | Content | Duration |
|---|---|---|
| Workshop 1 "Preparing Yourself and Your Family" | What To Expect In A Bushfire<br>Emotional Preparedness<br>Preventing Injury<br>Community Fire Safe<br>Deciding To Stay Or Go | 3.5 hours |
| Workshop 2 "Preparing Your Property" | How Houses Burn<br>Ember Proofing Your Home<br>Assessing Hazards Around Your Property<br>Creating A Defendable Space<br>Landscaping For Fire Protection<br>Water Supplies | 3 hours |

| | | |
|---|---|---|
| Workshop 3 "Responding to Bushfire" | Map Reading<br>Reporting A Bushfire<br>Bushfire Behaviour<br>Responding To Bushfire<br>Fire Fighting Strategies<br>Vehicle Safety | 4 hours |
| Workshop 4 | Networking (Meet Other Group Members)<br>Managing Anxiety & Depression[9]<br>Property Visit | 3 hours |

## Evaluation

Workshops were evaluated by both a pre and post workshop questionnaire, and through discussions with participants at the end of each workshop. Both the pre and post workshop surveys, and discussions, were completed in workshop time.

## Results

### *Survey*

133 surveys were returned (a return rate of 19.5%). Survey data were entered into SPSS[10] software package and a draft descriptive report was provided to the project team (Rowe & Goodman 2008).

The survey data showed the high interest in workshops, low interaction with the local fire brigade, moderate understanding of 'prepare, stay and defend or leave early' (despite half reporting they had experienced a bushfire) and variations in perceptions of risk between "locality" and "own home" (Figures 3 & 4). More than half of the women who responded to the survey were over 40 years of age. Around one fifth of women lived alone or were sole parents.

There was widespread support for all topics suggested for a basic skills course. Further refinement was possible following reference group consultation.

Figure 3 below sets out the results of two survey questions relating to interaction with the local bushfire CFS Brigade (N=118 on right hand side of graph, N=34 on the left hand side).

[9] Workshop 4 gave an opportunity for mental health services to reach a client group considered 'at risk' of developing mental health problems associated with post traumatic stress disorder (PTSD), anxiety and depression following the Wangary Fire.

[10] Statistical Package for the Social Sciences

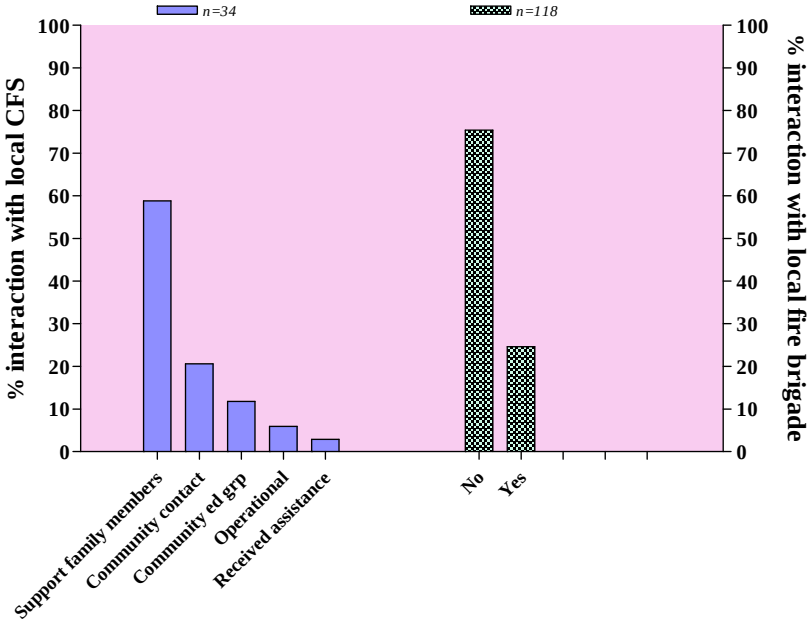



**Figure 3 Interaction With Local CFS Fire Brigade**[11]

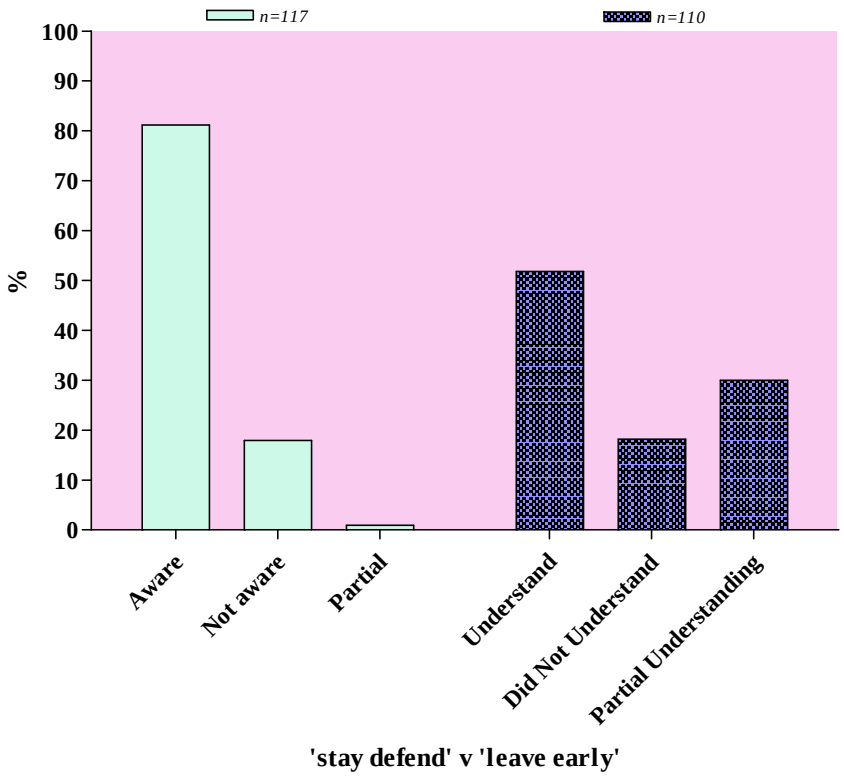



**Figure 4 Awareness and Understanding of 'Stay and Defend' or 'Leave Early'**[12]

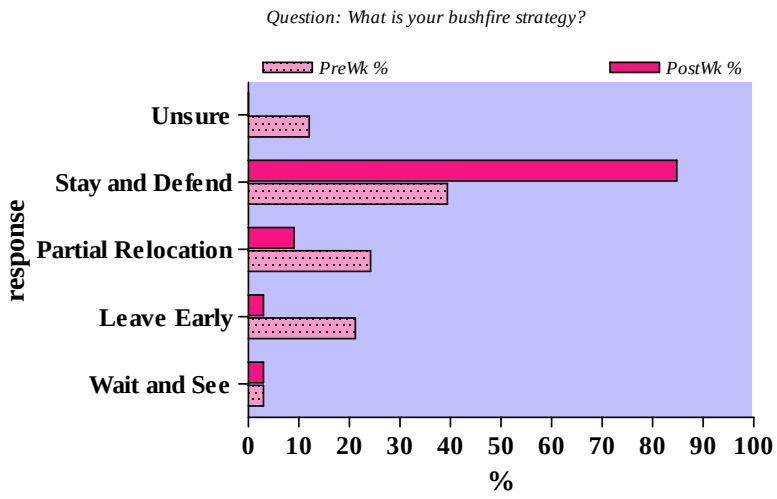
1175.4%% of women reported no interaction with the local CFS brigade. Of the 24.6% reporting either past or present interaction or involvement, most were around supporting family involvement (58.8%) or acting as a contact in the local community for fire incident information (20.5%).

## Pilot Workshops and Workshop Evaluation Data

50 women attended the workshops. Some attendees distributed 22 additional manuals to relatives and peers, potentially increasing exposure by 44 %. It is assumed that the changes noted between pre and post workshop questionnaires were due to the program (N=33). This assumption is supported by comments made by women during the workshops. Experience and knowledge varied in participants. A major shift in stated bushfire strategy, confidence, knowledge and preparedness occurred (Figures 5-6).

### *Bushfire Strategy and Confidence*

Figure 5 highlights responses to questions regarding bushfire strategy and confidence. 39.39% reported a 'stay and defend' bushfire strategy before the workshops and this increased to 84.84% at the conclusion of workshops. Confidence in their chosen bushfire strategy increased from 39.39% to 100%.




12 81.2 % stated they were aware of the 'stay and defend' or 'leave early message'. Of these, 51.8% stated they understood the message, 30% partially understood while 18.2% did not understand the message.

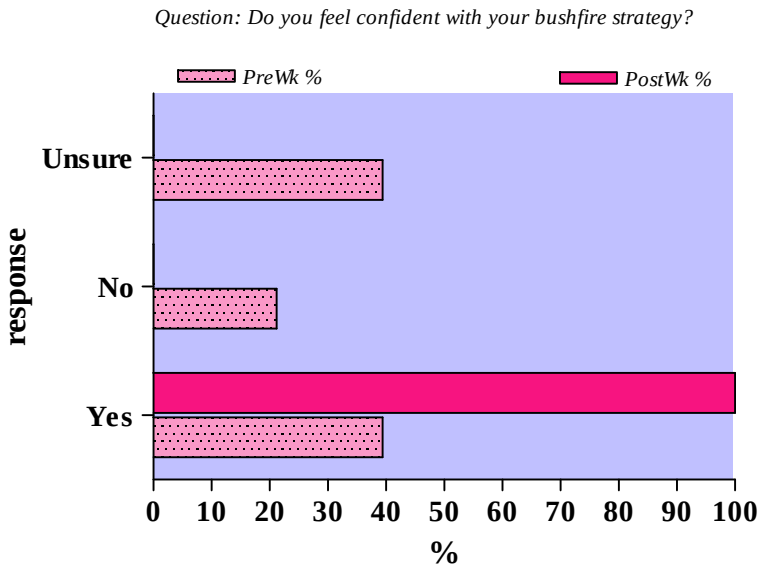
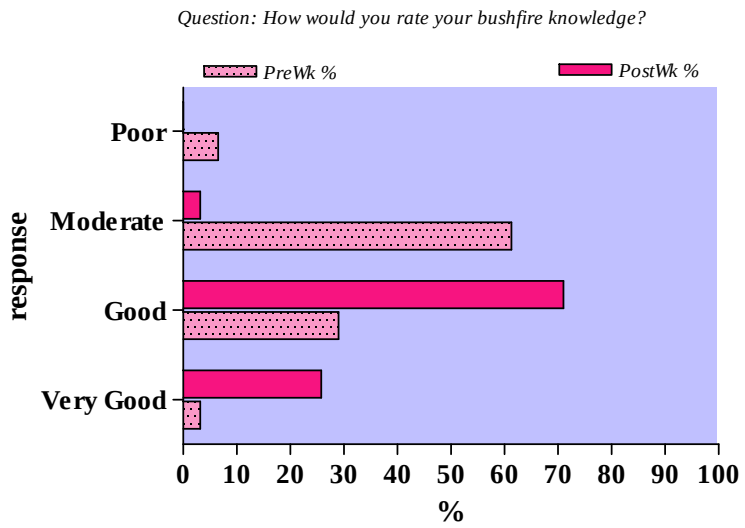



**Figure 5 Bushfire Strategy and Confidence**[13]

## *Knowledge & Preparedness*

Of note, several women stated that they were unaware that baths were unsuitable refuges (despite one local casualty sheltering in a bath). Self-rating of knowledge increased considerably (Figure 6), but questions testing knowledge, although demonstrating an increase, varied (particularly in regards to fuel types and fire behaviour). Many felt it important to understand bushfire behaviour, and a few requested for more information in future workshops. Preparedness also increased (Figure 6), with 81.18% stating they felt prepared by the end of the workshops.

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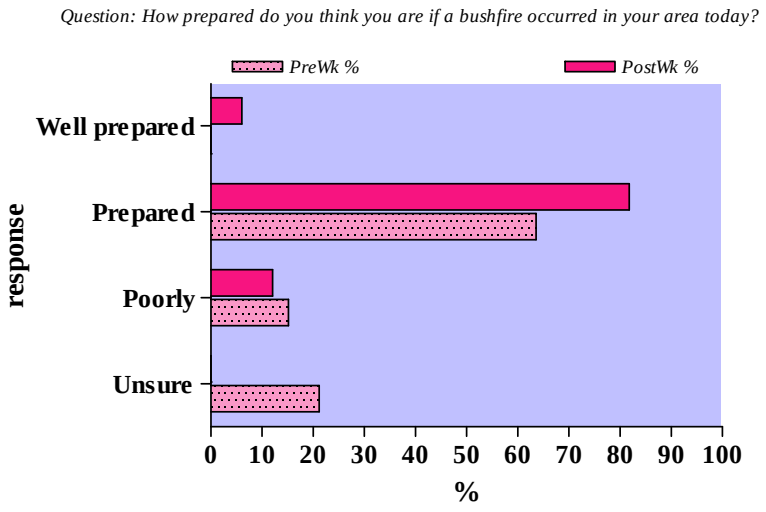


**Figure 6 Knowledge and Preparedness**[14]

## *Emotional Preparedness*

The emotional preparedness sessions were well received and deemed extremely relevant for participants. Other strategies to reduce stress were requested in addition to those provided at the workshop.

### *Refreshers*

Many women asked for annual 'refreshers' to maintain their knowledge and skills.

## *Mothers of Pre-school Children*

A crèche, provided for pre-school children, was not well patronised. However, those that used the service stated that without childcare provision they would not have been able to attend.

## *Indigenous Women*

No indigenous women attended the workshops, despite being encouraged to do so during the consultation process. Community Fire Safe meetings were held at several indigenous properties before workshops commenced.

### *Locus of Control*

The majority of attendees reflected an internal locus of control in regards to bushfire preparedness.

[14] 27.7% self-rated their knowledge as 'good' before the workshops and 70.96% rated their knowledge as 'good' at the completion of workshops. Before the workshops 63.3%stated they were prepared for bushfires. This increased to 81.81% at the conclusion of workshops.

## Discussion

### *Shifts in Strategy and Confidence*

Associated with a reported shift in bushfire strategy was an increase in confidence in the strategy chosen. A reported increase in knowledge and preparedness, together with confidence, indicates positive outcomes, given that a lack of confidence and knowledge may trigger late evacuation. However, it will also be important to practice skills and maintain knowledge by providing refresher training on an ongoing basis to prevent attrition over time. Having a written and practiced plan, and being emotionally prepared, are also critical to prevent late evacuation.

### *Bushfire Knowledge*

Some varied results around bushfire knowledge (especially fuel types and fire behaviour) may be an indication of how tightly held are some bushfire beliefs. Other explanations include not having an opportunity to read the notes, or the level of difficulty of the questions. The prevalence of the myth surrounding baths as a refuge was noted.

### *Engagement with Local Brigades*

Limited involvement by women in local brigades is noted and remains an issue (Figure 3). Offering a women's program is one way of engaging women with fire agencies. In this project, it was the first contact many women had with the CFS.

### *Timing & Critical Awareness*

Offering training three years after a local disaster was thought to be appropriate. Those attending had 'critical awareness' motivating them to attend. Some had also previously attended Community Fire Safe meetings, which raised their 'critical awareness" (Paton 2006).

### *Young Women & Mothers of Pre-school Children*

The majority of women responding to the survey were over 40 years of age (77.5%). Few women under 25 attended workshops. Early childhood care is a demanding role and mothers find it difficult to make extra commitments. Supplying a crèche did not guarantee attendance. Reaching younger women and mothers of young children may require different approaches to participate in fire safety programs.

### *Indigenous Women*

Lack of indigenous participation may be due, in part, to some exposure via community fire education programs prior to workshops. There are also other priorities more immediate for these communities such as health and socio-economic issues. Indigenous women are often involved in many programs aimed at their communities and are the drivers behind many initiatives (Lee Vallance, [Fire and Emergency Services Authority, Kimberley Region], pers. comm., November 2007; Adrian Simpson, [Eyre Peninsula Natural Resource Management, Aboriginal Liaison Officer], pers. comm., May 2008). Women's extended family networks are important. Informal education and use of visual thematic diagrams / graphics, by indigenous artists, together with checklists may be more appropriate (A. Simpson, ibid.).

### *Content*

Workshops offered in this project were based on units of competency. Assessment could be included into the program to ensure that attendees have demonstrated competency, if desired or appropriate, and for accountability for both client and training provider. The addition of more gender specific training materials is required.

### *Promotion of Workshops*

Several women participating in the program voluntarily disseminated their learning to their peers and family members. Others encouraged attendance or distributed flyers promoting the workshops. Limited advertising may have had some impact on the demographic profile of attendees.

### *Mental Health*

This community had recently experienced a major fire. Some women revealed that they (or their children/partners) were still coming to terms with the emotional impacts of the fire. After a major fire event it is important to recognise that some attendees, or their family members, may still be traumatised. Training thus requires facilitator sensitivity. It is important to be aware of potential mental health issues and to offer additional support services if required.

### *'Safe' Learning Environment*

Women appreciate the 'safe' learning environment provided where they can support each other in learning new skills not necessarily associated with traditional gender roles. Long and Honner (2006) report on the attractiveness to women of 'women only' training particularly where the skills being taught are 'non traditional' skills.

## Conclusions

Following involvement in a participatory learning program, most women reported shifts in their strategy from 'leave' to 'stay and defend', increased confidence, knowledge and preparedness. New material on psychological preparedness was offered and is considered vital, particularly for those who have decided to 'stay and defend'.

The motivation to learn for many women centred on protecting their family. This may be the best motivator to engage women in fire safety programs. Offering education programs after a fire event is an opportune time to engage the community, while 'critical awareness' is high and before complacency sets in.

Women are important keys to prevention. Women generally have primary care roles for almost all of the population via children, the elderly, the vulnerable and their own spouses. The roles women play in families, in their local community and in organisations makes them important risk communicators and educators.

Developing competency skills based education programs for the community fill a need and are an important adjunct to other community education programs offered by fire services.

There are clear gender differences in bushfire knowledge, fire fighting skills and risk perception. Lack of interaction with fire agencies by women remains an issue. An increase in women and children bushfire casualties over the last 30 years and the results of this pilot project provides ample evidence of the legitimacy, and necessity, of targeting women for bushfire safety programs.

## Acknowledgements

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