Outdoor Workers and Sports Participants – Sun Protection Challenges

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The literature regarding sun protection strategies for outdoor workers and sports and recreation users is somewhat sparse, as is data regarding attitudes regarding skin cancer risk of these groups. Reports of intervention are relatively rare and offer mixed results (see for example, Glanz et al., 2007). Farmers have been the subject of multiple studies in the USA; showing improvement in both sun protection and skin cancer detection rates with a combination of information, community-based screening facilities supported by local media (Mullan et al., 1996). We have been unable to locate any studies that systematically examine attitudes, beliefs and actual behaviours of outdoor workers across a range of occupations. There appears to be no UK evidence available on the incidence of skin cancer in UK outdoor workers. However there is international literature to suggest that compared to indoor workers they are at a greater risk of developing BCC and SCC, possibly as a result of their long term exposure to the sun (Girgis et al., 1994; Buller et al., 2005; McCool et al,. 2009). In addition to those involved in outdoor employment, there are a substantial number of people whose sport and recreational activity involves considerable periods outdoors and who should be considered as key targets, as shown in Table 1 below:

Table 1: Examples of outdoor occupations, sports and recreational activity involving substantial periods outdoors

Occupation groups	Sports and recreation
Farmers / farm workers	Cricketers
Fishermen	Golfers
Postal workers	Tennis players
Military personnel	Swimmers (outdoor)
Gardeners	Rock climbers
Construction workers	Beach sports (e.g. beach volleyball)
Surf lifesavers	Ramblers, trampers
Sports instructors especially water sports such as sailing	Water sports participants e.g. sailing, canoeing

High levels of UV exposure increases the risk of all three types of skin cancer, particularly squamous cell cancer (Oh et al., 2004). Non-melanoma skin cancers are twice as prevalent in outdoor workers as indoor workers (Girgis et al., 1994). The evidence from several countries such as the USA, Australia and Scandinavia shows that outdoor workers do not use adequate sun protection strategies and are poor at screening for suspicious lesions (LeBlanc et al., 2008; Peter & Gill, 2003). Furthermore outdoor workers are more likely to spend additional time in the sun during non-working periods due to deliberate lifestyle choices such as preferences for outdoor sports and leisure pursuits (Woolley et al., 2002).

American research indicates that knowledge of skin cancer risks is high but sun protective behaviours are poor among groups such as postal workers (Lewis et al., 2006) and farmers, especially males and younger age groups (Marlenga, 1995). Military personnel are often stationed in areas with high UV levels, with little data regarding the practicality or effectiveness of sun protection options beyond a study of levels of protection from different types of hats (Keeling et al., 1989). Other vocational groups that have been the focus of studies include airline pilots with evidence of higher rates of skin cancers from several countries, including the UK, USA and Iceland, although these studies acknowledge that lifestyle factors including high amounts of leisure time and holidays in sunny locations may also be influential (Rafnsson et al., 2000).

Training and competition for many sports presents a particular risk due to the low solar protection offered by clothing, the impact of sweating, friction and water exposure on sunscreen effectiveness (Moehrle, 2008). All professional cricketers are now being screened for skin cancer (Cancer Research UK, 2009); we cannot locate evidence that other national sports bodies are following suit.

Few countries appear to have specific health and safety legislation and support for specific measures to increase sun protection uptake appears to be ambivalent; UK health and safety personnel's support for subsidised sunscreen for outdoor workers decreased from 80% in 2003 to 2/3 in 2006 (Anon., 2006).The Union of Construction, Allied Trades and Technicians (www.ucatt.co.uk) highlights the issue of work related dermatitis on a Health and Safety web page but does not make any direct reference to skin cancer. Their site contains a link to an industry-backed occupational health scheme administered by a not-for-profit organisation, Constructing Better Health (http://www.constructingbetterhealth.co.uk) with a dedicated page for skin health issues which include a section on skin cancer, although as with UCATT the dominant focus is on dermatitis.

Legislative changes have been made in 'high risk' countries such as Australia where legal test cases involving two outdoor workers who developed skin cancers and successfully sued their employers (Fizsimmons et al., 2003), resulted in changes to legislation that required employers to provide protection for employees and for workers to cooperate with the measures (see Work Cover New South Wales (www.workcover.nsw.gov.au). Australian legislative and regulatory provisions do not extend to sport and recreation; only 34% of sports clubs have sun protection policies in place, although over 80% of sports with high sun exposure, (e.g. lifesavers)do. Training, advice and sample policies needs have been identified (Dobbinson et al., 2006) There is USA evidence that multi-component interventions including advice, training, and support by opinion leaders and behaviour modelled by credible people influenced habitual behaviours at ski fields (Andersen et al., 2008).

A recent qualitative study of outdoor workers in the South-West of the UK (Eagle et al., 2009) identified several key themes: fatalism, desire for organisational responsibility, personal impact and recognition of the need to protect children. The impracticality of staying out of the sun during the hottest parts of the day was seen as a major barrier to effective sun protection; resulting in outdoor workers being somewhat fatalistic about the health risks of their jobs, and sunburn seen as an acceptable occupational risk. The need for organisations to provide sun protection advice and appropriate equipment was recognised, however it was apparent that not all organisations did this.

Other findings from this study included that the lack of clear policies regarding sun protection within organisations, such as mandatory provision of sun cream, hats and sunglasses, was also noted and the possibility of strengthening of policy requirements by regulators was seen as being desirable. Several implementation problems were evident, such as high turnover of staff due to the seasonal nature of work linked to tourism and holiday makers. It was also noted that a sun burn warning was not a requirement under current health and safety provisions and was therefore not covered in first aid communications, although there was concern about information overload if it was included, given the range of other topics already covered such as strokes and heart attacks.

The study also found that information regarding skin types was seen as neither relevant nor practical for employers of outdoor workers. While some workers noted they were already required to wear long sleeved shirts and were not permitted to wear shorts, advice regarding covering up was seen as patronising and impractical. Some participants indicated they tried to compensate for these difficulties through the use of sun creams that provided protection for specific situations. Conflicting advice in the past regarding eye protection was noted, with one directive having advised that sun glasses should not be worn in case the glass broke; this was followed by a second directive advising of the impact of reflective light damage to eyes. The result was, inevitably confusion as to what action should be taken.

An additional finding was that outdoor workers whose jobs involved contact with children, such as running sporting activities, saw provision of sun protection for children as desirable – but problematic: *"Health & Safety wouldn't let us do that* (apply sunscreen to children who needed it) *– you can't touch kids nowadays"* and: *"We are not allowed to supply the sun cream in case they are allergic to it, otherwise we would be held responsible"*. There was, evidence of some staff ignoring this issue in order to provide sunscreen.

As part of the Eagle et al. (2009) study, the leaflet *Advice for Employers of Outdoor Workers* (from the Health & Safety Executive) was assessed using the SMOG readability index, originally developed by McLaughlin (1969 and subsequently validated and extensively applied (Wallace & Lemon, 2004; Mumford, 1997); the leaflet is written at a level well above the likely ability of many outdoor workers to comprehend it (Kemp & Eagle, 2008). Preference for posters rather than leaflets was widespread.

Declaration of Interests

Julia Verne is the Director of the South West Public Health Observatory

Simon Jones, Lynne Eagle, Gillian Kemp and Rebecca Hughes from the University of the West of England were commissioned to conduct a study of sun protection strategies within the Cornwall and Isles of Scilly PCT region; this paper is an extension of part of the reports produced from that study

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