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In this section, details of our research design are provided, as well as our rationale for using this methodology

RESEARCH DESIGN

3.1 Methodology

Online survey

A quantitative survey was conducted over the internet using a quota-based[2] sample, sourced from online panels. This methodology was chosen for a number of reasons:

- An online survey methodology allows access to a very large sample cost-effectively.
- An online survey methodology means participants can be presented with visual and audio stimulus material. This is advantageous, because it allows videos, sound bytes and still images from the campaign to be presented to participants.
- The timeframe required to conduct an online survey is relatively short compared to other methodologies.
- It provides an environment where the participant is free to speak their mind, which can be important when asking questions which have a degree of social sensitivity.
- Convenience and better access to participants (i.e. the survey arrives at the participant's desktop and can be completed any time of day or night, at their convenience).

[2] Quotas were applied to age, gender and location – refer to Evaluation of National Skin Cancer Awareness Campaign Technical Report.

- There are no interviewer data entry or data editing errors, or bias through third parties processing surveys.

The fieldwork was conducted by ACNielsen, drawing from a number of panels in order to meet the quotas. Those who qualified and completed the survey received an incentive for their participation, redeemable for goods and services and approximately equivalent to two dollars.

Fieldwork dates

Fieldwork was conducted in five survey waves:

- a **pre-campaign survey** prior to the launch of the first season of the campaign in November 2006 (fieldwork dates 13th to 17th November 2006);
- after the conclusion of the TV advertising over Summer 06/07 in **February 2007** (fieldwork dates 12th to 16th February 2007);
- prior to the second season of the campaign in **November 2007** (fieldwork dates 13th to 19th November 2007);
- after the conclusion of the free-to-air television advertising over Summer 07/08, in **February 2008** (11th to 15th February 2008); and
- after the conclusion of the free-to-air television advertising over Summer 08/09, in **February 2009** (9th to 19th February 2008).

Methodological limitations

Climactic conditions are likely to have had some impact on the results of the research, particularly in relation participants' sun protection behaviour, although it is difficult to disentangle these climactic effects from the behavioural effects of the campaign. Seasonal and weather variations are less likely to have impacted upon knowledge, attitudes and campaign awareness and reactions.

It is clear that burning, tan-seeking, and the adoption of sun protection are particularly influenced by the weather. The questionnaire asked participants about whether they had deliberately sought a tan in the last fortnight, and also whether they had experienced any reddening of the skin after being in the sun during the last two weeks. Accordingly, weather information was collected not only for the fieldwork periods themselves, but also for the two weeks prior to each.

Data on the average temperature, rainfall, proportion of wet days, proportion of cloudy days and UV indices across capital cities during and two weeks prior to each of the fieldwork periods

are reported in the Evaluation of National Skin Cancer Awareness Campaign Technical Report. Summaries of the climactic conditions are provided below.

The (unweighted) average national temperature across capital cities during the November 2006 fieldwork, and the two weeks prior, was 19.0°C. This was similar to the November 2007 average national temperature, which was 20.5°C. Unsurprisingly, average national temperatures were higher for the February surveys, which were 23.4°C in 2007, 23.0°C in 2008, and 24.3°C in 2009.

In November 2006, the average national rainfall across Australian capital cities was 1.8mm per day during and just prior to the fieldwork period. The following year, the average was 2.4mm per day during the November fieldwork and the two weeks prior. However, November 2007 had a lower proportion of rainy days compared to November 2006. Thus, overall, there does not appear to have been a great difference between November 2006 and November 2007 in terms of wet weather and the corresponding opportunities for exposure to the sun.

In contrast, both February 2008 and February 2009 were substantially wetter than February 2007. In February 2007, the average rainfall across all capital cities was 2.5mm, compared with 5.6mm in February 2008 and 4.4mm in February 2009. However, there was a higher proportion of wet days during and just prior to the fieldwork in February 2008 than there were in either the previous or subsequent Februarys.

Cloud cover during the November 2006 and November 2007 fieldwork was reasonably consistent, with approximately a third of days (36% and 33% respectively) during the research period being cloudy. There was a greater proportion of cloudy days during the February 2008 fieldwork period, with a national average of almost one in two days being cloudy (48%) compared to the corresponding period in 2007 (28%) and 2009 (43%). This is unsurprising considering the higher proportion of wet days and levels of rainfall over this period noted above.

The national UV index levels were relatively stable during the corresponding fieldwork cycles. The UV index, averaged across all capital cities, for the November research was 8.9 in 2006 and 9.1 in 2007. For the February cycles of fieldwork, the national averages were 10.1 in both 2007 and 2008 and 9.7 in 2009.

The number of wet, rainy and cloudy days during the fieldwork periods is expected to have the greatest influence on respondents' behaviour. In this context then, the greater proportion of wet and rainy days in February 2008, compared to the corresponding periods in 2007 and 2009 is expected to have had some impact on the results of the research, particularly behavioural indicators.

Questionnaire

The questionnaire (included at Appendix C) was developed in close consultation with the Department of Health and Ageing to ensure that information needs were prioritised and appropriately addressed. Care was taken to ensure that any changes in the questionnaire were minimised to allow comparability over time. Specifically, the questions for parents were not included for the November 2007, February 2008 or February 2009 surveys, and the stimuli were changed to reflect the inclusion of new executions over the life of the campaign.

A sample of panel members was selected, stratified by age, gender and location, and potential participants were sent an email inviting them to complete the survey. The average survey durations were 8.8 minutes for the pre-campaign survey and around 15 minutes for each of the subsequent surveys, the extra time needed for recall of, and reactions to, the elements of the campaign.

Obtained sample

The final sample is illustrated in the Table 3.1.1. Parents of children aged 0-17 years were only included in the first two waves of the survey (Nov 06 and Feb 07). Although parents were a secondary target audience of the campaign, due to the role of parental influence, the campaign did not directly target them with the advertising materials. Hence, it was not deemed necessary to continue tracking their responses to the campaign throughout the remainder of the evaluation.

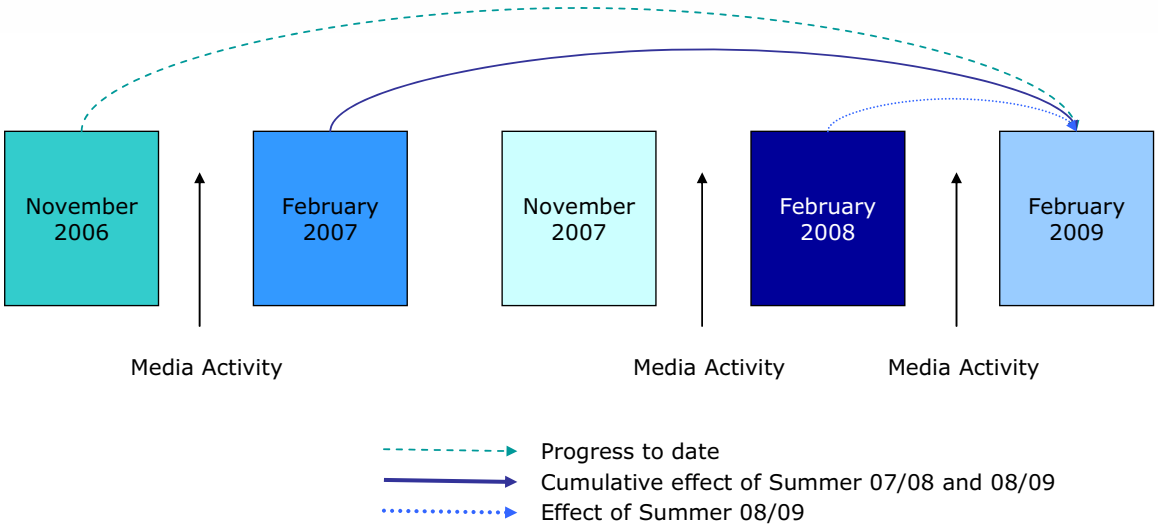
Table 3.1.1 Sample size

	Nov 06	Feb 07	Nov 07	Feb 08	Feb 09
Total sample	3,082	3,097	1,999	2,021	2,013
14-17 year olds	1,105	1,096	993	1,010	1,009
18-24 year olds	1,120 (incl. 120 parents)	1,123 (incl. 123 parents)	1,006	1,010	1,004
Parents of children aged 0-17 years (parents 18 years+)	977	1,001	Nil	Nil	Nil

Statistical analysis

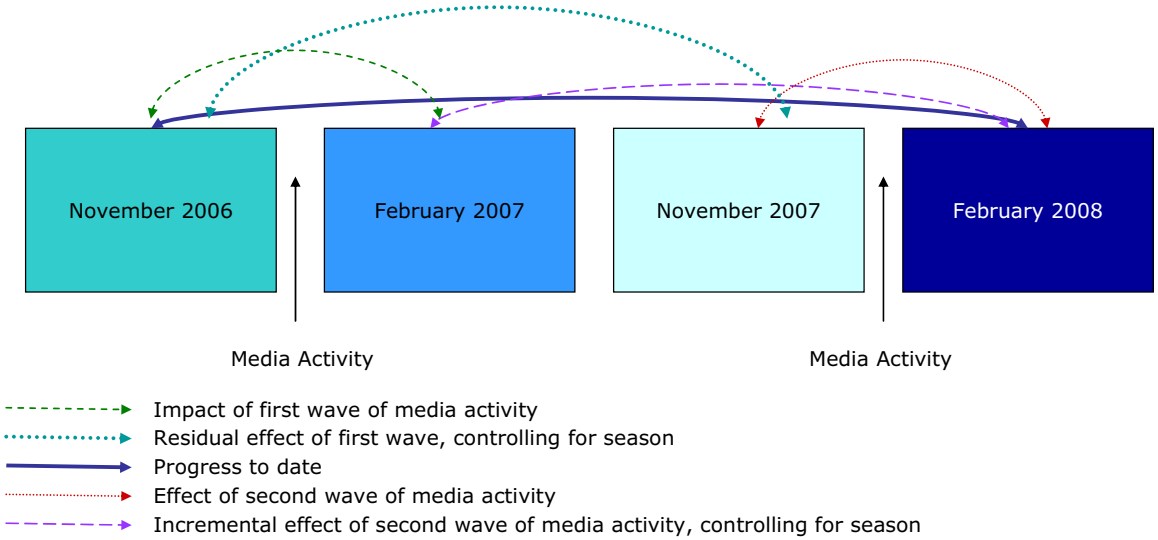
Statistical tests were undertaken to compare the results across the five surveys. As illustrated in Figure 3.1.1, three separate sets of comparisons have been conducted for this report, which focuses on the final phase of campaign activity.

Figure 3.1.1 Statistical comparisons conducted for this report



Previous reports contain the results of the other statistical comparisons conducted across the first four surveys, which are illustrated in Figure 3.1.2.

Figure 3.1.2 Statistical comparisons reported previously



For categorical data, chi-square tests have been used. For ordinal data, Kendall's tau-b has been employed. In the case of interval data, ANOVA tests have been undertaken to compare means, as appropriate.

It is worth noting that using sub-samples of 1,000 yields a 95% confidence interval of, at most, just over ±3% for a stand-alone survey. When comparing between surveys or segments, a sample of 1,000 yields a maximum confidence interval of ±4.4% at the 0.05 level. These confidence intervals are conservative, because they are based on a proportion of 50%. Larger or smaller proportions will yield a narrower confidence level.

The response rate for each survey is shown in the Table 3.1.2.

Table 3.1.2 Response rates

Survey wave	Response rate
November 2006	12.9%
February 2007	10.3%
November 2007	8.4%
February 2008	11.6%
February 2009	10.9%

The response rate represents the number of people who participated in the survey before the quotas were filled, as a percentage of all those who were sent an invitation. These rates are lower than a typical response rate for online surveys[3]. That said, in all forms of survey research, the response rate among younger age categories is generally lower than for older age categories. It is also worth noting that, when response rates are calculated for telephone surveys, these are based on the number of people who agreed to participate in the survey as a proportion of all those with whom contact was made. It is impossible to calculate the analogous figure for online research.

During the analysis, the data were weighted to reflect the geographical distribution of Australia, and also to correct for any gender bias within each target audience.

[3] As an indication, the typical response rate for a 15 minute survey on a health topic is generally around 30% for adults, but drops to 15%-20% for young people.

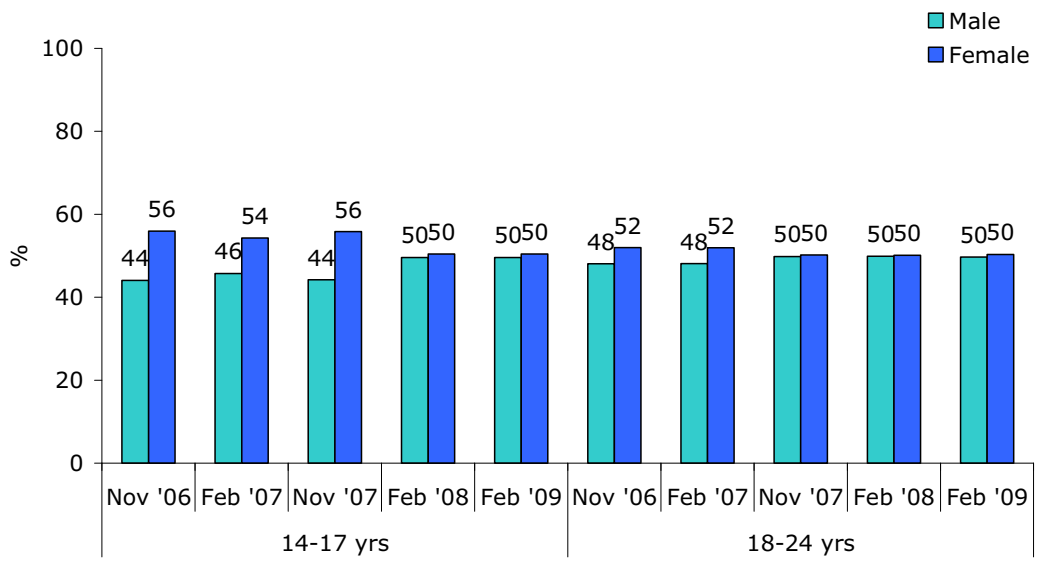
It should also be noted that, in tables and figures, the sum of the component items may not appear to add to 100% due to the effects of rounding.

3.2 Sample characteristics

The following figures show the sample characteristics of the unweighted sample.

Figure 3.2.1 shows that the sample was somewhat unbalanced in terms of gender for each target audience, particularly in the earlier waves. The analyses were weighted to correct for the gender imbalance[4].

Figure 3.2.1 Age and gender

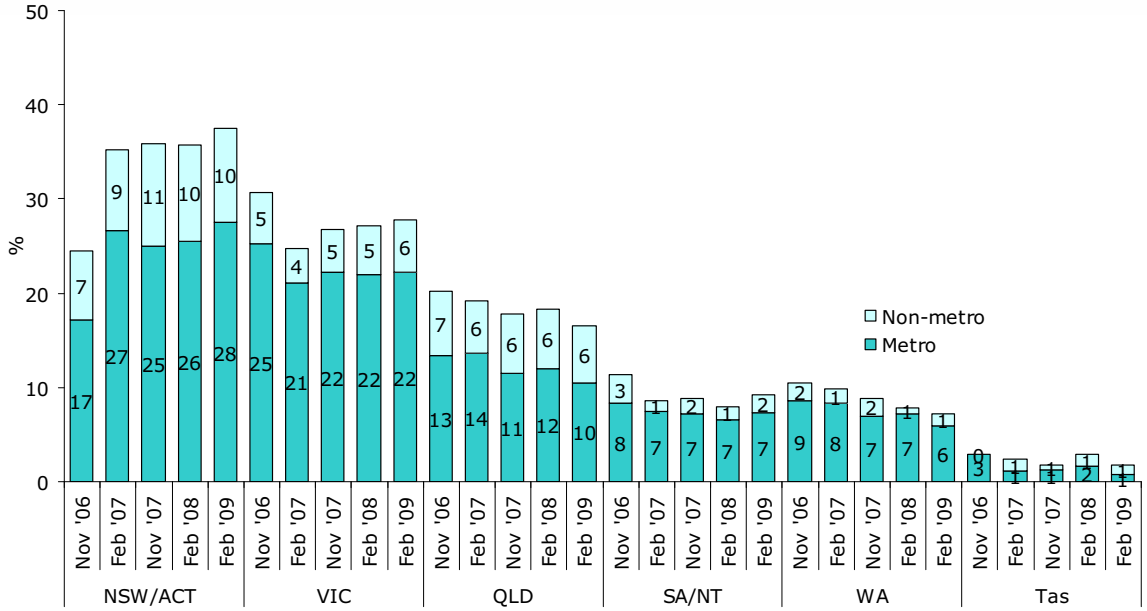


14-17 years, Wave 1: n=1,105; Wave 2: n=1,096; Wave 3: n=993; Wave 4: n=1,011; Wave 5: n=1,009
18-24 years, Wave 1: n=1,120; Wave 2: n=1,123; Wave 3: n=1,006; Wave 4: n=1,010; Wave 5: n=1,004

[4] Survey data were weighted with reference to 2001 Australian Bureau of Statistics census data.

Figure 3.2.2 shows the distribution of the five survey samples, across metropolitan and non-metropolitan areas. In the pre-campaign survey, there was an overrepresentation of people living in Melbourne, and an under-representation of those from Sydney. Accordingly, the data have been weighted to correct for this imbalance, and to reflect the distribution of the Australian population.

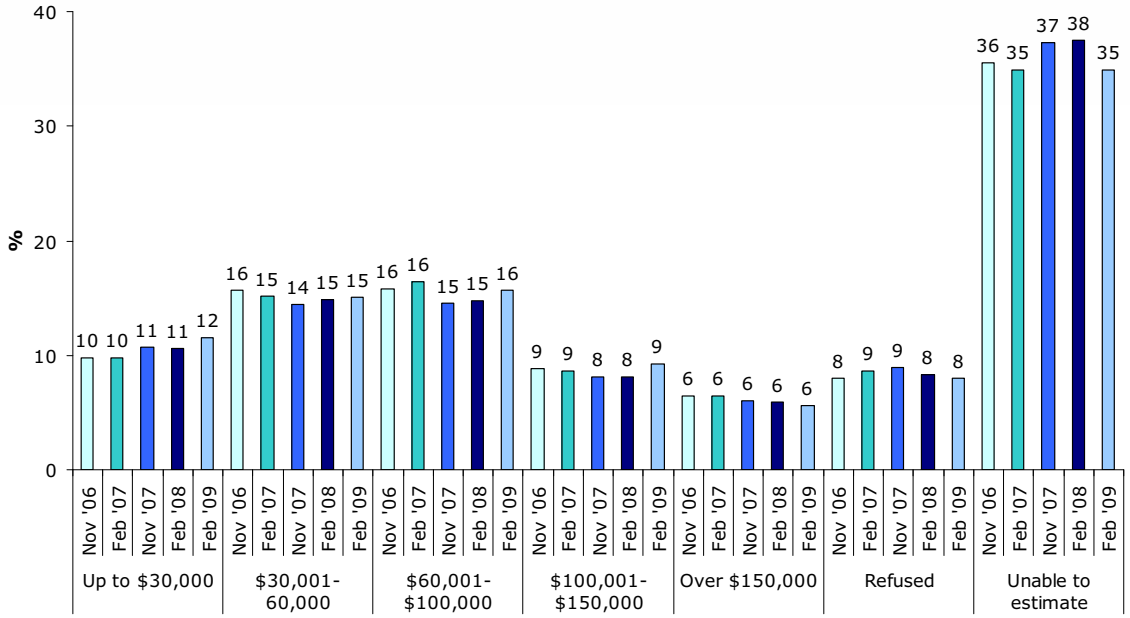
Figure 3.2.2 Location



14-24 year olds, Wave 1: n=2,224; Wave 2: n=2,219; Wave 3: n=1,999; Wave 4: n=2,021; Wave 5: n=2,013

The income distribution of the sample is shown in Figure 3.2.3. A large proportion of participants were unable to estimate their household's income, reflecting the fact that around half of the sample was comprised of 14-17 year olds.

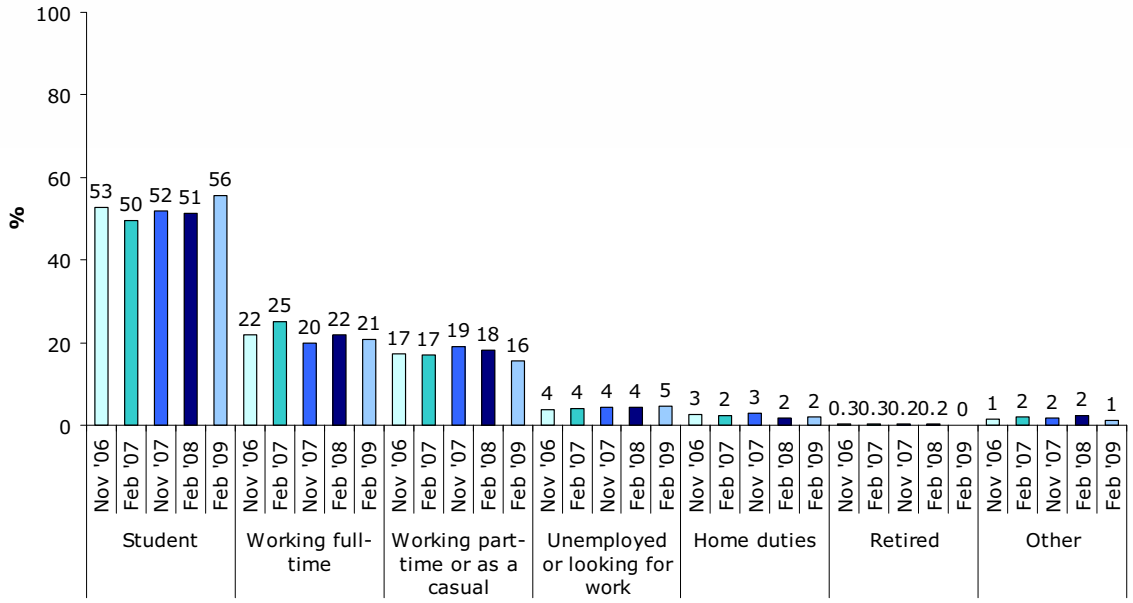
Figure 3.2.3 Household income



14-24 year olds, Wave 1: n=2,225; Wave 2: n=2,219; Wave 3: n=1,999; Wave 4: n=2,021; Wave 5: n=2,013

Those aged 16 years and above were asked about their employment status. The results are shown in Figure 3.2.4.

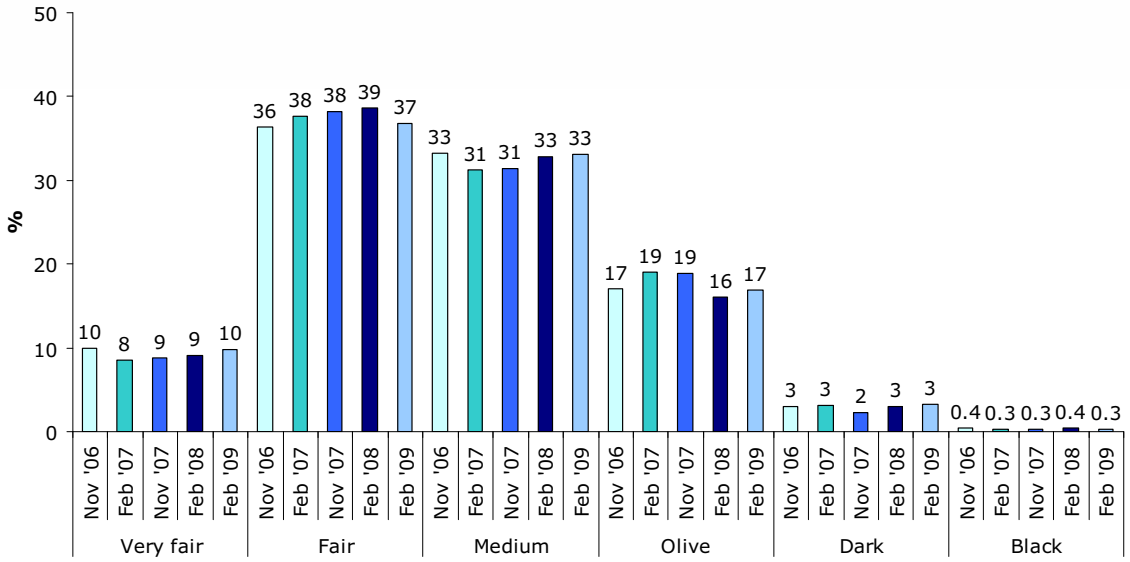
Figure 3.2.4 Employment status



16-24 year olds, Wave 1: n=1,716; Wave 2: n=1,641; Wave 3: n=1,548; Wave 4: n=1,514; Wave 5: n=1,509

Figure 3.2.5 shows that just under half of those in the sample described themselves as very fair or fair.

Figure 3.2.5 Skin colour when not tanned



14-24 year olds, Wave 1: n=2,225; Wave 2: n=2,219; Wave 3: n=1,999; Wave 4: n=2,021; Wave 5: n=2,013