

Exposure to Two Sources of Information on UV Effects

Men's Accounts of Reactions to Two Sources of Information on Negative Effects of UV

Exposure: Facial Morphing and a Health Promotion Fact Sheet

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Abstract

This study explored young men's experiences of two sources of information designed to encourage UV protection and investigated which of these was perceived as having the most potential to impact on future UV protection/exposure. Eight men aged 18 to 35 years were shown an information sheet on health-related effects of UV exposure, and images of their own faces aged with and without UV exposure using ageing software. Participants were interviewed to explore reactions to these sources of information, and current and predicted sun protection and exposure. Men found both sources of information interesting and influential, and thematic analysis revealed three master themes: 'gendered health and appearance attitudes', 'UV exposure as a risky health behaviour', and 'taking future preventative measures'. Implications for research and health care practice are discussed.

Key words: tanning, appearance, facial morphing, men, UV exposure

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Exposure: Facial Morphing and a Health Promotion Fact Sheet

Exposure to ultraviolet (UV) radiation is the main avoidable risk factor for skin cancer (Cancer Research UK, 2014). Malignant melanoma is the most serious form of skin cancer (Cancer Research UK, 2013) and cases of malignant melanoma in the UK are growing more rapidly than any other form of cancer (British Skin Foundation, 2014). Previous studies utilising various appearance-based interventions have shown that observing the ageing effects of the sun decreases individuals' intentions to sunbathe (Gibbons et al., 2005; Jackson & Aiken, 2006; Mahler et al., 2003, 2007).

Recent research has suggested that raising appearance concerns could be useful to encourage participants to engage in healthy behaviours (such as engaging in exercise and quitting smoking; Grogan and Masterson, 2012). Ageing software enables researchers to show individuals their faces aged up to 72 years with and without UV protection and has proved to be a valuable intervention when exploring appearance issues related to UV exposure. It is already known how females respond to health and appearance-based UV information (Williams et al., 2012, 2013c). Williams et al. (2012) found that the majority of the forty seven female participants who had viewed their faces digitally aged with UV exposure, had concerns with the negative effects of UV exposure on appearance and as a consequence would be motivated to change their future UV exposure/protection behaviours. These findings were replicated by Williams et al. (2013c) who found that when comparing seventy women (with an average age of 23.70 years) who had either seen their faces aged (with or without UV exposure) or had seen a UV health literature intervention, women who had seen their faces aged had significantly more positive attitudes towards sun protection and higher intentions to protect their skin than those who had been exposed to the health literature

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intervention. However, the impact of these sources of information on males is currently less clear and in a recent systematic review of appearance-based interventions to improve UV exposure and protection/intention behaviours, it was found that men have tended to be overlooked in previous research focusing on UV exposure (Williams et al., 2013b).

Men's views on facial wrinkling and ageing may be quite different from women's. Many studies suggest that at all ages, adult men attach less importance to appearance than women (Grogan, 2011), and reporting concerns about facial ageing is often seen as a feminine-appropriate discourse (Hall, Gough, & Seymour-Smith, 2012). Looking youthful and smooth skinned is arguably less important for men in Western societies than for women, and less tied with concepts of attractiveness for males than for females (Grogan, 2011). Subsequently, men's responses to facial morphing may differ from women's. There is currently only one published study where men's experiences of facial morphing have been examined qualitatively. In this study, Williams et al. (2013a) used ageing software with a sample of forty-three men aged between 18 and 34 years who saw their faces aged with UV exposure. Interestingly, some men had a positive attitude towards looking 'rugged' when aged and welcomed the addition of wrinkles, suggesting that facial ageing as a result of sun damage may not be as much of a concern for some young men and may even be seen positively by some.

Given the reduced cultural importance of looking youthful for men, men may be more motivated to change their behaviour as a result of information on health-damaging effects of UV exposure than information on appearance. Hegemonic masculinity (Connell, 2005) and the norms of being strong and healthy rather than focusing on aesthetics (Courtenay, 2000) may mean that the appearance-related effects of UV exposure are not at the forefront of

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men's thoughts with regard to UV exposure. Men may also avoid considering health impacts, in an attempt to be seen as stoical and strong (Courtenay, 2000; Jeffries & Grogan, 2012), so may also be resistant to taking on board health-related information. Indeed, in a recent study, 70 percent of males did not know the warning signs of skin cancer (Skin Cancer Foundation, 2014). Therefore, it is unclear which kinds of information will be maximally effective in encouraging men to protect their skin, and it is crucial to investigate how men talk about the relative impacts of UV exposure on future appearance and on health.

The aims of the current research are to investigate men's responses to two sources of material: a UV information sheet focusing on the health-damaging effects of UV exposure, and UV ageing appearance-based information (using APRIL® ageing software as used in Williams et al., 2012, 2013a, 2013c) to investigate the effectiveness of these different kinds of material in improving men's future sun protection and/or exposure behaviours.

Research questions

How do men perceive two sources of information focused on health and appearance effects of UV exposure, and which type of material do they feel would have the biggest impact on their future behaviour?

Method

Participants

As we wanted to compare our findings directly with those of Williams et al. (2013a), we selected our sample from the population of UK University students. We also wanted to include participants with a range of skin colours, to ensure that we had accessed the views of men with different likelihoods of skin burning and tanning. Eight young male students aged

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18 to 35 years with a range of skin colours participated in the study. The APRIL® ageing software ages participants up to 72 years. Previous research focusing on males' experiences of the APRIL® ageing software has accessed men aged 18 to 34 (Williams et al., 2013a) and therefore it was decided to use a similar age range in the current study so comparisons could be made to Williams' work. A further reason for targeting younger men was to investigate whether the health and appearance based material could potentially influence men's UV exposure and/or protection behaviours from a younger age before severe UV damage is caused. Research has shown that the risk of developing malignant melanoma can increase by nearly 60 per cent if using sunbeds for the first time before the age of 35 (Cancer Research UK, 2013). Skin types of participants ranged between 1 (pale skin which burns very easily) to 6 (black skin). Table 1 provides information on each of the participants.

Materials

A laptop loaded with the APRIL® ageing software, a health information fact sheet and a dictaphone were used. The health information fact sheet used in this study was developed by the North Yorkshire and York Primary Care Trust (NYYPCT, 2012). This particular fact sheet was chosen as it focuses on similar issues as those presented in the UV health literature intervention utilised in Williams et al. (2013c).

The NYYPCT fact sheet focused on the majority of the health effects related to UV exposure: facts, skin and skin types, skin cancer, factors increasing the risk of developing and dying of skin cancer, awareness and protection, and sunbeds.

The interview schedule was developed to cover relevant aspects of appearance and health related to UV exposure. Questions were designed to explore experiences of the APRIL® age process and thoughts on the health information fact sheet. Participants were asked about their

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experiences of being morphed to look older. In addition, they were asked questions relating to their own UV exposure and protection behaviours, personal opinions about the health promotion material, and how other people perceive UV exposure.

Procedure

Ethical approval was gained from [blinded for review] University Psychology Ethics Committee. Participants were selected through opportunity sampling. The interviewer approached male students around the [blinded for review] campus and gave them details of the study as well as an information sheet with her contact information attached. Potential male participants were also approached in lectures. All participants gave full informed consent to taking part in the study, and for quotes to be used anonymously in reports.

Quiet rooms in the [blinded for review] building were used to conduct the interviews. Participants were interviewed individually. The interviewer was a 23 year old female MSc Health Psychology student. The participants were informed of what would be involved in the study and were then given a consent form to sign to confirm that they agreed to participate in the study. Each participant was asked to have a photograph taken on the laptop webcam. They were assured that the image would be deleted once the interview had finished. Each participant was then asked to read the health information fact sheet showing the damaging health effects that excessive UV exposure can cause.

Once participants had finished reading the fact sheet, the interviewer showed the participants their faces aged using the APRIL® ageing software. Two images were presented simultaneously: their faces aged as if they had not been exposing their skin to the sun and using sun protection, and their faces aged as if they had been exposing their skin to UV rays and had not been using sun protection. Participants were also shown 3D images of their faces

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aged so their images could be rotated and could be viewed from differing angles (such as a side view, giving a clearer view of the depth of wrinkles on the side of the face).

Once participants had seen their image aged on the APRIL® ageing software, the researcher then ran an interview with each participant. The semi-structured interviews were centred on appearance and health due to excessive UV exposure. Questions were used as prompts, and subsequent questions were asked based on the participants' responses to these initial questions, to ensure that topics considered important by the participants were all covered. At the end of the interview, participants were fully debriefed and given follow-up information and researcher contact details.

Data Analysis

Thematic Analysis, a method used for identifying and analysing patterns emerging from within data (Braun & Clarke, 2006), was chosen for data analysis. The audio-taped sessions were transcribed and resulting data were analysed by both authors. The authors chose to use inductive thematic analysis due to its ability to create a detailed and rich account of data (Braun & Clarke, 2006). The six-phase process outlined in Braun and Clarke (2006) was followed when analysing the individual interviews. All themes were agreed by both authors.

Results

Issues which emerged from the participants' individual interviews were clustered together to form three key themes: 'Gendered health and appearance attitudes', 'UV exposure as a risky health behaviour', and 'Taking future preventative measures'. Quotes are indicated by pseudonyms below and L indicates line numbers on transcripts.

Gendered health and appearance attitudes

The similarities and differences in health and appearance attitudes in men and women were discussed extensively by the participants. In particular, health effects of UV exposure appeared to be a concern for these men, and they mostly considered these to be more of a concern to them, and to other men, than appearance. Only Mike and Sam considered appearance to be more important to them than health. Other men reported that without good health, appearance was unimportant (John, L. 294-295) and that appearance was not a priority (Pete, L. 166-167). Appearance was often seen as “superficial” (John, L. 297). John discussed health in relation to a recent skin cancer scare (L. 214-216) and past experience of a relative who died from skin cancer (L. 203-204). He had first-hand experience of seeing how UV exposure was extremely detrimental to health and therefore health impacts of UV exposure were of direct relevance to him. This had made him particularly health aware and he acknowledged this:

...if you have a member of the family that has had (.) or (.) a problem in this respect then erm (.) you know (.) it's er (.) it does actually put the person on guard a bit more (John, L. 218-220)

Other participants, who had not had previous personal experiences of family or friends who had health issues as a result of UV exposure, also reported that health was important to them. Although health was important, one man risked his health through additional, indoor sun-tanning. Sam's UV exposure behaviours contradicted his statement about health being important, but he acknowledged this:

I would say health's important because I do things like I do swimming and like outdoorsy stuff and things like that but at the same time I smoke so it's kind of counteracting it and obviously I use sunbeds as well (Sam, L. 176-178)

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Bruce believed that ageing in men is not symbolised by wrinkles but by success and wealth (Bruce, L. 56-59). However, the reactions to the APRIL® ageing software from some of the male participants, including Pete, indicated that appearance changes were a concern for them:

...I've never used a sunbed myself and [laughs] having looked at that picture I'm not going to start now either (Pete, L. 98-99).

Most men considered that appearance impacts of UV exposure might be more important to women than men, and that concerns about appearance would be “vain” (Sam L.187) and “obsessive” (John L. 33) for men.

...it's important to be presentable to other people (.) erm (.) but I wouldn't really like to try and identify myself you know as being obsessive about appearance (John, L. 31-33)

The participants talked about appearance as being more important to women than to men, and resisted being positioned as concerned about their appearance. When he stated that appearance was important to him, Sam commented “I know that's so vain” (L.187). Both Sam and John recognised that appearance should not be an important factor for them as men, as it was seen as primarily a feminine concern. There was an overall consensus that women were more concerned with their appearance than men, and all eight participants took the view that if women were to be shown images of their own faces aged using the APRIL® ageing software that they would be more affected than most men:

I think they'd be more affected by the ageing software (.) erm (.) because (.) I, I know that they they're more (.) they worry more about what they look like (Mike, L. 167-168)

In contrast to the belief that women were more concerned with appearance than men, participants reported that women would be affected similarly to males by the health

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information factsheet; so health risks were seen as of equal importance to both genders, especially in reproductive contexts:

It might even affect them more because females have, know that they must be healthy for example if they plan to have a child they know that they must be healthy to be able to look after that child (Bruce, L. 180-182)

UV exposure as a risky health behaviour

The majority of the men saw UV exposure as a risky health behaviour. The health information fact sheet raised awareness of health issues related to UV exposure, of which some of the men had little or no previous knowledge. The prevalence of skin cancer was something which particularly stood out to the participants from the health information fact sheet. They tended to be shocked at the high prevalence of the illness:

I've never, never realised that the statistics were that high really of people suffering with cancers from them so that's that stood out quite a lot (Pete, L. 101-103)

The fact that skin cancer is preventable was linked with alarm at the prevalence being so high. John said that intentional exposure was "unnecessary" (L. 168) and "risky" (L. 180). Sam also seemed shocked by the high prevalence of skin cancer (L. 113-114). This suggested that he may not have known how serious UV exposure or sunbed use can be to health. Nevertheless, after reading the health information fact sheet and becoming aware of how it can be prevented, he maintained that his behaviours were not necessarily going to change as he had an "it won't be me" (Sam, L. 129) mentality and therefore he would continue with this unhealthy behaviour (Sam, L. 128-129, 131). Pete also suggested that some people do know the risks but are in denial:

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Think oh well it won't happen to me so (.) whether people do know and they're in denial (.) but as far as I can see I don't think that they they seem that (.) that sort of affected by (.) what could happen to them (Pete, L.160-162).

Prior to reading the health information fact sheet, some of the participants were unaware that there were two different types of skin cancer and therefore the health information fact sheet had provided them with this new information:

I only thought there was one and erm (.) the fact that it effects so many people (.) I thought I didn't think it was (.) a common form... (Nathan, L. 59-60).

Although these participants had only just become aware of there being two different types of skin cancer, only Bruce specifically stated that this knowledge would cause him to take preventative measures (L. 96-99). The majority of participants may only have heard about the most serious type of skin cancer, malignant melanoma, and therefore learning that there is a less serious type of cancer, non-melanoma, which is usually the easiest to treat, may have made them feel less at risk of developing a serious illness:

...the two types of cancers that was the knowing that one is far more dangerous than the other [inaudible] would make me (.) any because any cancer sounds bad and knowing that there was even worse than yeah that would definitely make me (.) wear skin protection (Bruce, L. 96-99).

The participants often talked about UV exposure in relation to skin type classification. This information in particular stood out to them from the health information fact sheet. The knowledge of the different skin type classifications encouraged participants to protect their skin more if they were at high risk. However, if their risk of damaging their skin was low, they appeared to be less likely to plan to use sun protection. Consequently, giving individuals this information is not always beneficial, as if they feel they are less at risk they will not take appropriate measures to protect themselves:

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...the parts that would (.) is less likely to make me have erm protection is the skin types because knowing that my type is the least likely to develop it... (Bruce, L. 88-90).

However, if individuals believe their skin type classification to be higher (their skin darker) than it actually is, then they may not be taking the appropriate precautionary measures to protect their skin. Therefore giving these particular individuals skin type classification information would be advantageous if it encouraged them to protect their skin more appropriately for their skin type. Although the men tended to focus on the negative health issues surrounding UV exposure, some of the participants said that the sun does temporarily make individuals look more healthy when “your skin’s got like a glow effect to it” (Sam, L. 49-50). Both Greg and John said that they thought the image of their faces aged as if they had been exposed to UV rays looked “healthier” (Greg, L. 23-25., John, L. 130-134, 153-154) than the image of their faces as if they had not been exposed to UV rays:

I did actually think that the UV exposed picture looked a little bit healthier in a way (.) you know (.) the tan actually looked slightly healthier than the sort of almost anaemic (.) sort of pale complexion (John, L. 132-134)

Sam liked the immediate effect of a healthy, glowing complexion that a sunbed gives, and when asked about future consequences he stated that he was aware of these, but tried not to think about this too much (Sam, L. 60-63) and actively suppressed these worries:

Yeah erm (.) you see things on TV like how people develop skin cancer from it and stuff like that and you get warned about it and everything but (.) I don’t think it really plays into your mind that much (.) I think you’re aware of it and you know not to go too far with it but if you have one maybe once every two weeks or something like that or maybe even once a week I don’t think it really plays into your mind that much (Sam, L. 54-58)

Taking future preventative measures

After reading the health information fact sheet and seeing the APRIL® ageing software, some of the men said that they would take some of the preventative measures suggested on the health information fact sheet to protect themselves from UV rays:

Now that I've kind of read that it kind of makes me want to keep some form of sun tan cream with me

(Mike, L. 84-85)

There was no noticeable difference between whether it was the health information fact sheet or the APRIL® ageing software which had influenced them to potentially change their current behaviours. Bruce, John, Mike, Nathan and Pete all stated that both materials would make them think about their behaviours. When asked which intervention would prevent them from exposing their skin to UV rays the most, Bill, Mike and Sam thought that the APRIL® ageing software would have most effect (Bill, L. 129-130; Mike, L. 138-140, 143-144, 148-149 and Sam, L. 135, 139-143). Both Bill and Sam referred to the self-relevance of the APRIL® ageing software (showing their own faces aged) when justifying their choice. However, while sunbed user Sam said that he may be more likely to use sun protection and not use as much accelerator before he goes onto sunbeds (L. 34-35, 42-43), he was not discouraged from using sunbeds altogether. As discussed previously, even after reading about how much more at risk of skin cancer sunbed users are, Sam did not seem to think that the information was personally relevant. It appeared that he tended to focus on the present rather than the future. However, when asked which aspects of ageing were important to him, "probably growing old gracefully" (Sam, L. 166-167) was his response. Although he acknowledged that appearance was important to him, seeing his own face aged on the APRIL® ageing software did not appear to influence him to stop using sunbeds. This could be due to his focus on how a tan gives people a healthy glow (Sam, L. 48-50), leading to an

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emphasis on the current advantages of having a tan rather than the detrimental effects of UV exposure on future appearance. This supports the comment made by Pete (L. 160-162) that some people are in denial even if they are aware of the risks.

Although not effective for Sam, the majority of the participants felt that seeing their own faces aged on the APRIL® ageing software was effective and made the experience more “personal” which was seen as a good thing in terms of motivating more healthy behaviours:

...people age differently anyway no matter what but when it shows your ageing and then it makes it a hell of a lot more personal to that person so it will make them a lot more aware (Nathan, L. 124-126)

Bill made a comparison with potential television campaigns using images of other people’s faces UV-aged, saying that seeing his own face aged raised more concern as it was more personal to him:

it does raise a lot of concern (.) solely because it takes a picture of your face and it’s you (.) if you just saw an advert on telly and it was some woman who you’d never seen before then I don’t think it’d shock you too much (.) but (.) I definitely think it’s raised a bit of concern (Bill, L. 373-376)

Advertisements based on ageing which use actors’ faces are not necessarily maximally effective due to a lack of personal relevance. Individuals may assume that they will not age in the particular way portrayed in the media. This may be particularly the case if women’s images are used in these kinds of media messages. Self-relevance of the images was seen as crucial to the men we interviewed:

...now it’s personal become personal because I look at someone else’s face and if I saw someone else’s face and it started looking horrible I’d be like it’s not my face so I’m not going to look that bad (.) but now now that it’s actually personal I can attribute it towards me myself... (Bruce, L. 166-169)

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Although the participants seemed to be most shocked by the APRIL® ageing software, the majority of the men believed that using a combination of the APRIL® ageing software and health information fact sheet would be most effective to use in a preventative intervention to discourage men from exposing their skin to UV rays:

...because you've already had the shock of it and then it'd be like right you're actually reading the facts and you start to relate it to that picture (.) so yeah (.) a combination of the two (.) definitely... (Sam, L. 204-206)

Pete referred to the APRIL® ageing software as “frightening” and “scary” (Pete, L. 12-13) and Bill further described the software as a “scare tactic”:

And it tries to like a bit of scare tactics so I think (.) definitely a combination of both so you see the ageing software and you see what it can do to you and this raises concern and then you pick up the leaflet after [Inaudible] and then you'd read through it and see all these facts and then (.) you'd have more of an awareness about it because of what you've just seen on the computer screen (.) and I think that's the best way to go about it because if you see that and then read facts like such and such people get skin cancer then it's going to be at the front of your mind (.) and erm (.) when you look at this photo (.) you're going to know going to want to know how to prevent it (Bill, L. 279-287)

Pete also referred to the “quite frightening statistics” (L .91) from the health information fact sheet in a similar manner:

Just that the percentages of people who've used erm (.) sunbeds really and that what the consequences of it (Pete, L. 88-89)

John commented that differences between men could determine which of the health promotion material is most effective:

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...the information is an important consideration for me (.) but I suppose for some men they probably won't want to bother that much with the information (.) they will want something very quick and they will want something that's highly visual (John, L. 445-448).

As John suggested, some individuals may be drawn to factual information whereas others may like information which is more visual. This could be a further reason as to why the participants felt that a combination approach of both the APRIL® ageing software and the health information factsheet would work well in a preventative intervention to discourage individuals from exposing their skin to UV rays.

Discussion

This study is one of the first to look at men's accounts of exposure to two different kinds of information regarding dangers of UV exposure. The aims of the current research were to explore how men perceive two sources of information focused on the health and appearance effects of UV exposure, and to investigate which type of material they felt would have the biggest impact on their future behaviour. Results showed that health appeared to be more important than appearance in relation to UV exposure in general, although appearance was still important, and for two of the men was more important than health. Most participants said that they would think about taking precautionary measures to protect themselves from UV exposure as a result of both sources of information. However Bill, Mike and Sam reported that it was the APRIL® ageing software which would have the most influence over preventing them from exposing themselves to UV radiation and encouraging them to use sun protection. Sun exposure was seen as a risky behaviour and seeing their own faces aged using the APRIL® ageing software was particularly shocking to the majority of participants, linked to the self-relevance of the images. The health information fact sheet provided some

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of the participants with new information (for example, that there are two types of skin cancer).

This research has provided an understanding of men's perceptions of health and appearance in relation to UV exposure. Williams et al. (2013a) showed that some men were influenced to protect their skin by the facial morphing exposure and some preferred the UV-aged images. Two of the participants in the present study reported that they felt the UV image looked "healthier" than the non-UV image, with one of the males commenting on the tanned complexion looking healthier than the "anaemic" complexion of the non-UV image. Some of Williams et al. (2013a) participants preferred the UV-aged images due to the addition of wrinkles and looking more 'rugged' rather than due to a change in skin tone. Looking 'rugged' is sometimes linked with a hegemonic masculinity, and concern about looking fresh-faced and wrinkle free may be seen as feminine (Connell, 2005; Hall, Gough, & Seymour-Smith, 2012). The participants in the present study tended to view wrinkles more negatively than in Williams et al. (2013a), with the ageing software being described as "frightening" and "scary". This is interesting as the men interviewed here were very similar to Williams et al.'s (2013a) in terms of age, being students, and geographical location, and further work will enable us to understand this disparity in results. The fact that these men clearly felt free to voice concern about skin ageing supports Hall, Gough and Seymour-Smith's (2012) suggestion that dominance of the traditional 'hegemonic' masculine scripts described by researchers such as Connell (2005) is decreasing, at least amongst the University men who took part in our study. Possibly these men would not identify as metrosexual (Simpson, 1994), and they clearly believed that appearance was more of a concern for women than for men. However, their reports were not traditional masculine accounts either. As well as appearance, all men were concerned about health impacts, contrary to what we had expected based on previous research that had shown that men may

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be reticent to present as caring for, and taking steps to protect, their health (Jeffries & Grogan, 2012). Accounts presented by these men suggested that both appearance and health-related materials would influence their sun exposure and protection behaviours.

Two of the participants in the current study stated that the APRIL® ageing software would influence them more than the health-based material to change their future UV behaviours, suggesting that for some men, appearance-related UV concerns may be more important than health risks. Other previous research related to UV exposure has tended to focus on women (Williams et al., 2013b, 2013c). It is essential in the future to explore men's reactions to appearance-focused images as men are often dissatisfied with their appearance (Mellor et al., 2010) and men may be at particular risk of engaging in risky UV-exposure behaviours when they are appearance-dissatisfied (Blashill et al., 2014). Tanning is one way to try to improve appearance (Hoegh et al., 1999), and data presented here suggests that men may be putting their skin and potentially their lives at risk unnecessarily.

Strengths and limitations

There are strengths and limitations to this study which will help in guiding the development of future research. Men's accounts in relation to appearance and health-related materials have not been investigated together prior to this study. This research has been valuable in providing a comprehensive understanding of what is important to a small sample of men with regard to UV exposure. This study is a development from previous research as it has explored UV exposure related to appearance and health from a male perspective, comparing the two sets of materials directly. The use of semi-structured interviews was beneficial to keep the interviews flexible while still allowing the interviewer to focus on certain topics. The discussion of these common topics from each of the participants enabled participant

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responses to be compared. Using semi-structured interviews also enabled follow-up questions to gain a deeper insight into their thoughts and/or behaviours (Willig, 2013).

A limitation of using interviews as a form of data collection is that some participants may suppress their 'private' view and display a more 'public' view (Al-Busaidi, 2008). Attempts to avoid this were made by assuring the participants that their data would be kept anonymous and that they would be given the opportunity to remove data at a later date if they wanted to. Although participants appeared to speak freely, responses need to be understood within a context where they were speaking to a woman researcher of a similar age. Karremans et al. (2009) have suggested that men sometimes make attempts to impress somebody of the opposite sex, so men may have spoken less freely about some issues than with another interviewer who was older or male. However, based on the data collected, we feel that men spoke very freely and indicated areas of insecurity and concern around appearance and health that would have been unlikely if they were restricting what they said. Future research with male/older interviewers could shed light on this interesting issue.

It is important to acknowledge the potential limitations of the participant sample. Our conclusions are based on data provided by a small sample of young male university students who were selected opportunistically. This sample is not representative of the wider population of men and as a result of this, our data may be unrepresentative. Our choice of sample was strategic so as to allow us to be able to make a comparison of our findings with Williams' (2013a) work. We have tried not to overgeneralise or overstate our findings, although future research using more diverse samples of participants will work towards addressing this issue and enable the exploration of variations between samples.

Implications for future research

Participants' responses were recorded immediately following exposure to the health information fact sheet and APRIL® ageing software. It would be beneficial to investigate the long term effects of these sources of health promotion material to see whether the material had influenced a positive change in UV exposure attitudes and behaviours. Confirmation of participants' UV exposure behaviours after being introduced to the health promotion material could be conducted using an objective measure of skin colour as used in Mahler et al.'s (2007) study. This would be an effective check on actual behaviours following exposure, and would demonstrate whether the health information fact sheet or APRIL® ageing software have been successful in encouraging participants to take more effective precautions in protecting their skin from UV rays.

In order to assess the efficacy of each intervention, a future mixed-method study could divide men into three groups with one group receiving only the APRIL® ageing software intervention, the second group receiving only the health information fact sheet and the third group acting as a control. Interviews could be conducted and questionnaires (such as those utilised in Williams et al., 2013c) could also be administered prior to and after being exposed to the health promotion materials to assess the extent to which each intervention appears to motivate the participants to improve their UV exposure and protection behaviours. Long term objective assessment of participants' skin colour after being exposed to the health promotion materials (using a spectrophotometer) could identify the extent to which each intervention has influenced participants to engage in safer UV exposure and protection behaviours. Using a mixed-method design combines advantages of both qualitative and quantitative research (Curry et al., 2009) whilst potentially compensating for some of their limitations (Johnson & Onwuegbuzie, 2004).

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The participants in the current research were young men aged 18 to 35 years. Future research with larger samples of participants and focusing on older men would allow for conclusions to be drawn as to whether the health promotion materials would be effective at discouraging older men from further exposing their skin to UV rays. Older adults may have more UV damage to their skin, so viewing the health information fact sheet in particular may influence them to look out for skin damage and skin cancer symptoms.

The findings of this study emphasise the need for both appearance and health-based materials to encourage men to engage in safer sun exposure and protection behaviours. Further studies could also investigate in more depth how men see these kinds of materials in relation to both health and appearance in relation to their identity as men, and could examine whether identity as ‘metrosexual’ impacts on the kinds of accounts presented.

Implications for health-care practice

Death rates from skin cancer in men have increased by 185 per cent since the 1970s compared to only 55 per cent in women (Cancer Research UK, 2013), despite a similar number of males and females being diagnosed with skin cancer each year (Cancer Research UK, 2013). Seeking health care runs counter to many aspects of hegemonic masculinity (Courtenay, 2000; Jeffries & Grogan, 2012), so men may avoid seeking health advice until the disease is in its more advanced stages. In a recent survey, only 51 per cent of males in the United States reported using sunscreen in the past 12 months (Skin Cancer Foundation, 2014). These statistics indicate that targeting males with regard to preventing unsafe UV exposure is vital for men’s health. The APRIL® ageing software and health information leaflets compared here have great potential in improving safer health practices with regard to UV exposure in males. Both are fairly easy to administer and could be presented in various health care settings, such as doctors’ surgeries or in retailers which sell holiday products such

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as sun lotion or swimwear, to ensure accessibility to men of all ages and skin types. If the health information were to be made more self-relevant (i.e. specific information for each skin type) and this was presented together with the APRIL® ageing software, individuals may be more likely to pay attention to the health warnings presented. This in turn would encourage the adoption of healthier sun protection and exposure behaviours which in the long term could lead to a reduction in the number of skin cancer diagnoses and could potentially save lives.

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Table 1: Participant Information

Pseudonym	Age	Skin type classification	Occupation	Additional comments
Bill	18	3	Undergraduate student	Uses sun tan lotion to prevent his skin from burning
Bruce	22	6	Undergraduate student	Does not use sun tan lotion but wears a hat when outside
Greg	21	1	Undergraduate student	Avoids the sun and uses skin protection
John	30	3	Doctorate student	Has a family history of melanoma
Mike	35	2/3	Undergraduate student	Has used sun tan lotion from a young age
Nathan	21	3	Undergraduate student	Uses sun tan lotion when it's very sunny
Pete	29	2/3	Undergraduate student	Occasionally uses sun tan lotion
Sam	23	2/3	Undergraduate student	Has used sunbeds since the age of 19