**Talking about sunbed tanning in online discussion forums: Assertions and arguments**

Dr Jennifer Taylor (corresponding author)

School of Psychology, Dorothy Hodgkin Building, Keele University, Staffordshire, UK, ST5 5BG

+44(0)1782 734265

email address: j.taylor@keele.ac.uk

Dr Alexandra Lamont

School of Psychology, Dorothy Hodgkin Building, Keele University, Staffordshire, UK, ST5 5BG

+44(0)1782 733323

email address: a.m.lamont@keele.ac.uk

 Professor Michael Murray

Email address: m.murray@keele.ac.uk

School of Psychology, Dorothy Hodgkin Building, Keele University, Staffordshire, UK, ST5 5BG

+44(0)1782 733363

**Word limit including all quotes and references: 9,416 words (including abstract, all data extracts and reference list)**

**Abstract**

**Objective**: There is increasing evidence of both health and appearance risks associated with sunbed use. At the same time, the sunbed industry promotes the benefits of using sunbeds, and the image of a tanned skin as attractive and healthy arguably remains embedded within contemporary Western culture. These tensions are played out in everyday conversations, and this paper reports a study which explored how sunbed users manage them within online discussion forums. **Design**: 556 posts from 13 sunbed-related threads, taken from 6 different UK based online forums, were analysed thematically followed by techniques from discourse analysis. **Main outcome measures**: Informed by social representations theory and discursive-rhetorical psychology, the way social representations of sunbed use are constructed, debated and disputed in online discussion forums were explored. **Results**: Sunbed users drew upon numerous representations to distance and protect themselves from negativity they were confronted with in the forums, utilising a range of rhetorical, discursive strategies to help them. **Conclusion**: Theoretical contributions and potential practical implications of the findings are discussed. Findings indicate, for example, that those working on campaigns and interventions in this area need to consider the wider negativity and argumentative orientation of sunbed users’ responses.

**Keywords:** sunbed tanning, qualitative, online forums, social representations theory, discursive-rhetorical psychology

**Introduction**

There are approximately 132,000 malignant melanoma skin cancers diagnosed globally every year and between 2-3 million non-melanoma skin cancers (World Health Organisation (WHO), 2017a). In the United Kingdom (UK) alone, more than 2,000 people die from skin cancer every year (National Health Service (NHS), 2017a, 2017b). Exposure to artificial ultra-violet radiation (UVR) through sunbed use is now a well-recognised carcinogen (WHO, 2017b), and has been estimated as being responsible for causing 440 malignant melanomas annually in the UK (Boniol, Autier, Boyle & Gandini, 2012). Sunbeds have also been found to be associated with a 67% increased risk of developing squamous cell carcinoma (a form of non-malignant melanoma) (Wehner, Shive, Chren, Han, Qureshi & Linos, 2012). Sunbed use can also cause irreversible aesthetic skin damage (Sinclair, 2003).

The risks have received increased negative attention from the media. Legislative efforts have also reflected growing medical concerns about the risks; the Sunbeds Regulation Act (2010) came into force in April 2011 in England and Wales, making it illegal for under-18s to buy, hire or use a sunbed. Similar legislation was implemented in 2009 in Scotland and 2012 in Northern Ireland (Cancer Research UK, 2016). Before the Industrial Revolution, a tanned skin was seen to symbolise the outdoor working class, associated with disease and ill-health, whereas having a suntan can now, in contemporary Western culture, be seen to reflect health and beauty (Hunt, Augustson, Rutten, Moser & Yaroch, 2012). Despite this positive image, the specific method by which a person actually acquires a tanned appearance has come under increased scrutiny, with artificial exposure to UVR taking on negative, almost stigmatizing connotations ‘increasingly viewed as irresponsible, ignorant or both’ (Hunt, 2012, p. 24). In parallel to this, the sunbed industry claims specific health benefits to sunbed use, such as increased vitamin D levels (The Sunbed Association, UK, n.d.).

Numerous quantitative studies have found that, despite knowing the risks, people continue to use sunbeds (e.g. Monfrecola, Fabbrocini & Pini, 2000; Knight, Kirincich, Farmer & Hood, 2002; Dennis, Lowe & Snetselaar, 2009). Sunbed users are motivated by various factors, although appearance enhancement has emerged as the most popular reason (e.g. Amir, Wright, Kernohan & Hart, 2000). Attempts have been made to explain, predict and change people’s sunbed-related behaviour using various psychological theories, especially the Theory of Planned Behaviour (TPB) (e.g. Hillhouse, Adler, Drinnon & Turrisi, 1997), and other Social Cognition Models (SCMs). One of the criticisms of utilising SCMs in the context of health risk behaviours, like sunbed tanning, is that they consider behaviours as being divorced from their surrounding socio-cultural context (Chamberlain & Murray, 2009). Whilst SCMs do provide some concession to this criticism, such as with the TPB’s subjective norms construct, these approaches arguably ‘only pay lip service to the social and contextual aspects of health and illness’ (Horrocks & Johnson, 2012, p. 2). There is a need to go further than this and explore the everyday social location of sunbed usage.

Although much qualitative research has provided insight into how, despite being aware of the dangers, sunbed users work to rationalise the risks in different ways (e.g. Murray & Turner, 2004; Lake, Thompson, Twelves & Davies, 2014; Carcioppolo, Chudnovskaya, Gonzalez & Stephen, 2014), their focus has tended to remain individualistic, with limited reference to the broader social environment. More specifically, existing qualitative research has typically explored the discourse of sunbed users in isolation. As conflicting information about the risks and benefits of sunbed use circulate, the discourse of sunbed users’ needs to be explored alongside the ideas circulating in the wider environment. How sunbed users manage the conflicting perspectives about sunbed use emerges as an important question.

Informed by social representations theory (SRT), (the authors) recently reported a study in which semi-structured interviews were conducted with both those who used and did not use sunbeds. A central focus of SRT is concern with the wider assumptions, beliefs, and ideas (social representations) about specific phenomena (e.g. sunbed usage) which circulate in societies, and which both shape the individual and are shaped by individual talk and actions (Joffe, 1996). Individuals though do not just absorb the social representations that circulate in their environment but can play an active role in using and negotiating them (Abric, 1996) because of emotional and identity-related factors (Joffe, 1996). To protect their own identity, people may draw upon alternative, challenging representations, to help them ‘manage’ and resist any negativity and stigma surrounding them (Joffe, 2002).

The findings (authors) revealed that social representations were underpinned by dimensions of health and beauty, which were engaged with in different ways depending on the sunbed-related position of the interviewee. Those who had never used a sunbed held two social representations of sunbed use: as a risky behaviour, and as a vain, aesthetically motivated behaviour. Inherent within these social representations was considerable negativity, evidenced by the use of insulting language and derogatory references to sunbed users. Sunbed users were very aware of this negativity, and were engaged in a considerable amount of identity-work in order to distance themselves from it. Sunbed users managed the negativity by constructing alternative representations of sunbed use: the risks as not a significant concern, sunbed use as acceptable if limited and controlled, and for a specific purpose (not just for a tan). Sunbed users drew upon a number of strategies in constructing these representations The main strategy was to compare what they perceived to be their own limited sunbed use with what they considered the more excessive use of others. Sunbed users frequently drew upon what Joffe (1999) refers to as the ‘not me’ ‘not my group’ phenomenon, as a way of deflecting the negativity from themselves and protecting identities.

With its focus on action, it has been proposed that it may be useful to draw upon discursive-rhetorical psychology (DRP) in addition to SRT (Gibson, 2015) to allow exploration of the specific argumentative functions social representations can serve. From a rhetorical perspective, Billig (1991) has argued that social representations are developed and articulated in the context of an alternative position and thus attention should be given to how social representations are used in light of these counter positions. Although the argumentative orientation of sunbed user responses emerged in our previous work (authors), its specific function was not examined in detail. Similarly, whilst Carcioppolo et al. (2014) found sunbed users drew upon language and logic-based argumentation when talking about sunbed use, there was no specific exploration of it. SRT has been criticised for underplaying the role of conflict and argumentation (e.g. Billig, 1991; Potter, 1996). As a consequence, the theory has been criticised for not giving sufficient attention to the specific functions that social representations can serve within interactional contexts (Potter, 1996; Gibson, 2015).

As part of their analysis exploring the social representations of organ donation and transplantation, Moloney and Walker (2002) turned to rhetorical psychology in order to explore the contradictions that saturated their data. Moloney and Walker reported how social representations of organ donation and transplantation were continually negotiated, with the majority of their participants endorsing the practice of organ donation but nearly always following their support with a qualifier or concerned comment, which situated the discussion within its wider rhetorical context. Despite recognising the argumentative nature of the social representations, there could have been more emphasis on the specific interactional work achieved by representations relating to organ donation and transplantation (Dickerson, 2012).

Through drawing upon SRT, some research (authors; Carcioppolo et al., 2014) has identified the argumentative nature of the responses of sunbed users, but has not yet explored it in any detail. Building upon this, the aim here was to explore the interactional work involved in the social representations pertaining to sunbed tanning. More specifically, by drawing upon SRT and DRP, the aim of the current study was to explore how social representations of sunbed use are rhetorically constructed, debated and disputed in discussions on online forums between those in support of and those against sunbed use. Online discussion forums provide a useful platform for providing ‘a proliferation of discourse on a wide range of topics as people argue, debate and construct their identities online’ (Jowett, 2015, p. 2), thus were a particularly appropriate data collection choice for this study.

**Method**

***Design***

The internet is increasingly used as an effective medium for qualitative data collection (Jowett, Peel & Shaw, 2011). As well as the benefits already described in the introduction, online discussion forums specifically provide a setting to explore discussion engaged in more naturally as opposed to an environment where a researcher is present and prompting (Jowett, 2015). This affords greater anonymity and thus individuals may provide less inhibited responses (Buchanan & Coulson, 2007). Another advantage is that online data collection can provide access to a diverse and varied range of experiences and opinions, by bringing together individuals from a variety of backgrounds (Braithwaite, Waldron & Finn, 1999).

***Selection of online forums***

A Google search was conducted to identify online discussion forums in the UK that contained sunbed-related threads, using a range of search terms (e.g. “sunbeds”, “sunbed tanning”, “online forums”, “UK”). Only forums that did not require registration to view the posted messages were assessed as suitable for the ethical reasons discussed in the next section. Six different forums were chosen; these were not sunbed or tanning specific forums, but larger forums that contained threads relating to a wide range of topics including beauty and health. From the six forums, 13 threads were selected specifically related to sunbed use. Only threads where the original message had been posted following the implementation of the Sunbeds Regulation Act (2010) in April 2011 were selected, in order to ensure that the discussions were taking place within the same wider, legal context. Other threads were discounted if they were considered too brief or contained several non-sunbed specific posts (e.g. focused on fake (sunless) tanning as opposed to sunbed tanning). We tried to select sizable threads in order to capture the most in-depth discussion on this topic. As the intention was to explore the specific interactional work between sunbed users and non-users, threads where sunbed users provided advice to other sunbed users were not selected. In total, the final data corpus was comprised of 556 posts, ranging from one to 484 words in length. All the threads were asynchronous in which messages are temporally spread out, where forum users can respond at a time convenient for themselves (Rodham & Gavin, 2006).

***Ethical considerations***

Ethical approval was obtained from the university’s Research Ethics Committee. Given the online nature of the research, the British Psychological Society’s guidelines for Internet-Mediated Research (2013) were consulted. Open discussion forums are generally perceived as being in the ‘public’ domain, thus users are typically aware that their posts can be seen and read by anyone who has access to the internet. In contrast, ‘closed’ forums are considered to be in the private domain, whereby a password, is typically required to post, respond, and even view messages (Rodham & Gavin, 2006). The BPS (2013, p. 7) guidelines state that ‘when it is reasonable to argue that there is likely no perception and/or expectation of privacy, use of research data without gaining valid consent may be justifiable, but particular care should be taken in ensuring any data which may be made accessible as part of the research remains anonymous and confidential.’

The forums chosen were considered to be in the public domain, given no membership or registration was required to view the posts. As a consequence, informed consent was not requested from the individual forum users. This has been a widely used approach in other studies utilising online forum data (e.g. Coursaris & Liu, 2009; Attard & Coulson, 2012; Coulson, 2014). Three forums (all owned by the same company) specifically prohibited the unauthorised use of any material. Following BPS (2013) guidelines, permission was gained via email from the relevant company. Permission was granted on the basis that all names, as per the BPS guidelines, would be anonymised at all times. Names of the forums, the threads, and the pseudonyms forum users created when registering have been omitted. Permission to publish the data was also granted by the forum owners.

***Data analysis***

The corpus of internet data was initially thematically analysed following Braun and Clarke’s (2006) guidelines, in order to capture the social representations pertaining to sunbed use. The first author transferred posts from the relevant threads into separate Word documents. These were printed and then read and re-read by the first author. The first author then coded the data; codes were typically one word or a few words long (e.g. ‘To improve skin’). Alongside the codes, the first author noted whether the post was made by someone in support of or against sunbeds. While this was not explicitly stated by the forum users, it was easily identifiable based on the content of the post. As our intention was to explore how representations are debated and disputed, it was important when moving coded extracts into separate documents to ensure comments made in response to the original post were captured. The subsequent theme searching stage involved organising codes into preliminary theme piles. The data extracts classified under each theme were then examined following the principles of discourse analysis (Potter, 1996). This enabled the identification of various discursive and rhetorical devices evident in constructing representations of sunbed usage, and how such representations were debated and disputed. We were interested in exploring how specific discursive and rhetorical devices and strategies were used to perform particular functions in the context of the interaction taking places in the forums. More specifically, we were interested in how arguments between those in support of and against sunbed use unfolded, exploring how discourse and rhetorical devices were used to enhance and defend the sunbed-related position of the forum posters (in support of or against sunbeds). All authors spent time refining the analysis, as well as commenting on draft versions of this paper.

**Findings**

The social representations of sunbed tanning were centred around health and beauty. These concepts however, were engaged with in different ways in order to rhetorically enhance and defend the sunbed-related position of the forum posters. Those in support of sunbed use, in particular, worked to protect and defend their identities against a considerable amount of negativity that they encountered in the forums. Illustrative posts are used to demonstrate the specific interactional work of how negative social representations were constructed by those against sunbed use, as well as rhetorically challenged and disputed by those in support of it. Similarly, example posts are used to illustrate how positive representations constructed by those in support of using sunbeds were challenged and undermined by those against using them. More specifically, the analysis demonstrates how posters worked to rhetorically advance their position; either in support of or against sunbed use. When illustrating the interaction between different posters, posts have been labelled in the numerical order they appeared on the threads (i.e. P1 is poster 1, P2 is poster 2 etc.).

***A risky behaviour***

Those against using sunbeds drew upon various strategies in order to represent sunbed tanning as a risky behaviour, which worked to legitimise negativity and opposition towards sunbeds. For example, the link between sunbed use and skin cancer was often presented as a definite, non-negotiable association, such as in the following post: ‘Sunbeds have been classed as carcinogenic by the World Health Organization [WHO].’ The claim here is rhetorically warranted by reference to an authoritative source (Widdicombe & Woofitt, 1995). Whilst the appearance risks were mentioned less frequently than the health risks, they were still presented as a non-negotiable consequence, serving to legitimatise their opposition:

P1 Fact of the matter is, using a sunbed will lead to premature ageing, you WILL end up like a wrinkly old prune if you don't have good genes, with or without cancer.

P2 Maybe but I know a few people who regularly use them for years. My mum’s friend who uses sunbeds, and salon owner where I go have flawless, unwrinkled skin. There is a lot of scare tactics in the media surrounding sunbeds so I would rather trust what I see with my own eyes. Also if all else fails there’s always Botox 

As evidenced by the initial quote above, the credibility of the argument is increased by the original poster presenting it as being self-evident (‘Fact of the matter is’). The simile (‘like a wrinkly old prune’) provides a means of objectifying the ageing effects in a negative manner. Whilst the argument is partly conceded (‘Maybe’) in the counter response, the second poster goes on to contest and undermine its legitimacy by citing personal examples where sunbeds have not had a detrimental aesthetic effect on the skin. In fact, cases were cited where using sunbeds had actually enhanced appearance (‘flawless, unwrinkled skin’). Embedded within this counter argument was scepticism and an implicit lack of trust in media ‘scare tactics.’

Also serving to defend and legitimise the negativity of those against sunbed tanning, sunbeds were typically argued to not be worth the associated health dangers, with personal experience often being drawn upon to support this, for example: ‘Potentially life-threatening and not worth the risks. My mum was diagnosed with superficial malignant melanoma a year ago and had to have a patch of skin removed.’ Statistics were also commonly used to endorse the argument about sunbeds not being worth the risks, as illustrated in the following interaction:

P1 Although people say the risk of getting skin cancer is very small, and the increase in risk as a result of using sunbeds is negligible, I whole heartedly disagree. Over 110,000 were diagnosed with skin cancer in 2009 and around 2600 of those people died.

P2 Out of those who died of skin cancer, I’d wager the majority of them didn’t use sunbeds. Choosing not to use a sunbed doesn’t mean you won’t get skin cancer. So you’re taking a risk of skin cancer every day whether you’re pale or tanned. The chances are fractionally higher with a sunbed but in the grand scheme of things, they may as well be the same odds.

In the initial post, the specific figures of 110, 000 and 2,600 work to convey the seriousness of the risk. This is undermined in the second post by the poster pointing out that sunbeds are not the only cause of skin cancer. Although the higher risk was conceded, it was downplayed through the use of an extreme case formulation (‘fractionally’). Betting terminology (e.g. ‘wager’, ‘odds’), works to support the argument that cancer is unpredictable, thus there is no way of knowing the disease will actually be avoided by not using sunbeds.

Another strategy drawn upon to legitimise negativity and opposition towards sunbeds was to articulate the simplicity of the decision to not use a sunbed by posting very brief and succinct messages, illustrated by the following examples: ‘HUGE no,’ ‘Definitely not,’ ‘No way in hell,’ ‘No, No, No, No, No!! They should be banned!’ ‘I would never consider using such a machine’ and ‘Cancer beds?! No thank you!’ These posts were littered with extreme case formulations (e.g. ‘definitely’ and ‘HUGE’) which emphasise that under no consideration would they use a sunbed. Extreme case formulations (Pomerantz, 1986) are a strategy which works to strengthen claims by taking them to their extremes. Repetition, capital lettering, and exclamation marks further work to assert this. Objectifying sunbeds in terms of ‘a machine’ and a ‘cancer bed’ conjure up a particularly negative images.

***An aesthetically motivated behaviour***

 Sunbed users were often represented as being preoccupied with their appearance which, in light of the associated health risks, was considered particularly ‘vain’ and ‘superficial.’ Similarly, to the representation of sunbed tanning as a risky behaviour, this worked to legitimise, in some cases, quite extreme negativity and opposition towards sunbed use. Such negativity proved controversial as is illustrated in the following exchange:

P1 People who regularly use them are idiots.

P2 Erm I use them and it really annoys me when people make generalising statements like “people who use them are idiots.” Unless you live a 100% safe life style then who are you to call me an idiot because of a personal choice I make?

P1 I believe that people who regularly use something that hugely increases risk of skin cancer for vanity are idiots. One of my best friends uses them loads and I think she's stupid to do it.

P3 I agree with whoever said people who go on them are idiots, and I mean that in the nicest possible way because I really like (name) you seem to have your head screwed on and you seem lovely, but as you’re evidently an intelligent girl, I don’t think I could ever understand your decision to use sunbeds!

P2 That’s fine you don’t have to understand it but ultimately it’s my decision and it annoys me when people get on their high horses about it and think its ok to call people names. I know the risks and am an adult so really it’s entirely my choice and not really anyone else’s business (I mean that in the nicest way).

P1 Ok I could phrase it better. I don’t think you’re an idiot (name), just the choice to regularly use sunbeds is idiotic. I also feel the same about other things though. I detest smoking and drugs, and obviously drinking too much or eating really badly are also idiotic.

The annoyance as to what was detailed in the first post was immediately emphasised in the counter response with the extreme case formulation (‘it really annoys me’). A theme of hypocrisy is alluded to by asking ‘who are you to call me an idiot?’ with the question serving to make the point that it is unlikely that they ‘live a 100% safe lifestyle.’ Only then would they be authorised to express this negativity. Embedded within the second post is the argument that sunbed use and engagement with the risks is a personal choice which they are entitled to make. In the third post, the poster of the original message restates their negative opinion; however, it is softened somewhat by personalisation (‘I believe…’), which allows for a certain amount of disagreement. The extreme case formulation emphasises the magnitude of the increased skin cancer risk (‘something that hugely increases the risk of skin cancer’). The reference to their best friend as being stupid for using sunbeds serves to further legitimise and maintain their negativity and opposition. It is not just a throwaway comment directed at people they do not know very well if it is a belief directed even to a friend.

Although agreed with, the negativity is softened somewhat in the fourth post by a different poster (P3), complementing the author of the second message (e.g. ‘you seem lovely’). The positive observation about her intelligence (‘you’re evidently an intelligent girl’) can actually be seen as implicitly trying to undermine it. The negativity (‘I agree with whoever said people who go on them are idiots’) is also softened by the following comment (‘I mean that in the nicest possible way’), which works to present the author (P3) as not being overly critical. The notion of personal choice is again evident in the final post. Personal choice was further emphasised by asserting that it is ‘not really anyone else’s business,’ followed by the qualifier (‘I mean that in the nicest way’), which softens the statement. There could be a sarcastic undertone to this qualifier given that this identical comment appeared in an earlier post directed at them. The initial post that provoked this discussion is mitigated somewhat in the last post by the change in wording (‘I don’t think you’re an idiot (name), just the choice to regularly use sunbeds is idiotic’); the negative meaning appears however to remain the same. This negativity is warranted by presenting sunbed use as not subject to any disproportionate attention compared to other health risk behaviours.

In further strengthening negativity and opposition towards using sunbeds, a lack of understanding was expressed as to why people continue to use something risky purely for their appearance. In particular, many asserted a lack of understanding given the number of safer fake tanning (sunless tanning) options available:

P1 I do appreciate that it is everyone’s personal choice to use them, and that of course there are risks in lots of different things, but with sunbeds, it’s a risk that is just so easily avoided. There are so many other ways to tan your skin if desired. I just find it baffling. BAFFLING!! Could you not just fake tan yourself save the health risks?

P2 I don’t like fake tan. It gets everywhere, looks orange, streaks and smells.

P3 I have used fake tans that don’t smell and don’t streak.

P2 Please, god, tell me which ones as I’ve never found any that don’t make me orange. That’s why I sometimes go for them [sunbeds].

Here, the initial post opens with a concession (‘I do appreciate’), which presents the author of the post as reasonable and their argument, and their opposition to using sunbeds, as well thought out and considered, rhetorically strengthening their position. Their lack of understanding was strengthened by referring to the risk as avoidable, emphasised by extreme case formulations (‘just so easily avoided’). Capital lettering, exclamation marks, and repetition (‘baffling. BAFFLING!!’) emphasises the lack of understanding more and further enhances the strength of their opposition to sunbed use. In the first post, fake tan is presented as a safe alternative. This is undermined in the counter post by the poster expressing personal dislike for using fake tan, reinforced by listing the specific features to which they are averse. This was subsequently challenged in the next response by the poster citing their own personal experience of using fake tan successfully without any of the problems the previous poster had listed. The final post demonstrates amenability to using fake tan and presents sunbed use as not being their first choice but, instead, as a consequence of not being able to find a fake tan that is aesthetically pleasing. This amenability can be seen as serving to deflect away some of the negativity they know is associated with sunbeds, as well as working to defend their position as someone who uses a sunbed.

***Risks as not a significant concern***

The majority of messages posted in support of sunbeds included explicit acknowledgement of the risks before trying to downplay their significance and, as a consequence, represent the risks as not a significant concern. Specifically, the risks, particularly the associated health dangers, were contested and challenged via different strategies. This, in turn, rhetorically worked to defend the position of those in support of sunbeds. One of the main strategies was to refer to the ubiquity of risk. By citing the risks inherent in a wide variety of behaviours, sunbed use was generalised as just one of many risky practices. The process of listing (Jefferson, 1991) worked to emphasise this:

Sunbeds ARE dangerous

so is smoking
so is alcohol
so is obesity
so is motor biking
so is sky-diving
so is plastic surgery
the list goes on.

Listing in this vertical manner helps to demonstrate the quantity of potentially risky behaviours, reinforced by the closing phrase ‘the list goes on.’ The post opens with a disclaimer (‘sunbeds ARE dangerous’), which works to anticipate and deny any potential criticism that the author of the post is ignorant to the risks. Disclaimers (Hewitt & Stoakes, 1975) are rhetorical devices, which try to prevent people interpreting what is about to be said in a particular way. What is being disclaimed is typically normatively undesirable (Willig, 2000), thus in this case the poster makes it clear they are aware of the risks, perhaps as an attempt to ward off any accusations of being uninformed or ignorant of the dangers. Embedded within this argument as to the pervasiveness of risk was a fatalistic argument. Not only was it impractical to avoid all risks, it was presented as pointless given the unpredictability of life. A particularly vivid example of this is illustrated in this exchange:

P1 Each time you leave your house you are risking your life. You could be the safest person in the world and get hit by a bus tomorrow. I ride my horse and use sunbeds for my own pleasure because if I worried about all of the risks in life I’d never get out of bed. The way I see it I may as well enjoy myself doing things that give me pleasure because I could be the safest person in the world and be dead tomorrow.

P2 What you don’t seem to understand is that I’m saying yes there are unavoidable risks in life but that using sunbeds is 100% avoidable, they are not necessary in anyway whatsoever, so there is no argument to say that it is NOT a stupid thing to do. Fair enough you are entitled to knowingly take that risk but you can’t argue that it isn’t stupid. You seem to be getting wound up by people saying that it is a daft thing to do…but it is, unquestionably.

P1 Again though (I’ve asked this a few times but no one has answered) should I stop riding my horse too? That is an unnecessary thing to do that carries a lot of risks. Should people also stop doing other dangerous sports like skiing as they are also dangerous and unnecessary?

The impracticability of avoiding all risk is emphasised in the initial post (‘I’d never get out of bed’), working to defend their own decision to use a sunbed. Reference to the unpredictability of life (‘hit by a bus tomorrow’) was then cited, which worked to demonstrate that it is pointless being unduly preoccupied with risk, serving to defend and legitimise their behaviour. The counter response undermines the relevance of this argument, as well as simultaneously working to advance their position of being opposed to sunbeds, by illustrating how sunbed-specific risks are completely avoidable. The negativity surrounding sunbed use, and undermining of the decision to use a sunbed, was intensified by the view that sunbed use is a deliberate and intentional behaviour. While conceding that it is a personal choice, the initial argument as to it being a ‘stupid’ and ‘daft’ thing to do is presented as being unquestionable. This is challenged by the author of the initial post by questioning the acceptability of participating in other risk behaviours that can also be considered unnecessary, such as horse riding. The implication here is that sunbeds are unfairly receiving a disproportionate amount of negative attention, which works to help legitimise their behaviour. Questioning the fairness of the negativity and opposition can be seen as a means to try and strengthen the original poster’s stance of being in favour of using sunbeds.

Another common argument often employed by those in support of sunbed use was that the risks were insignificant and did not warrant concern. Statistics were typically used to warrant these claims:

P1 The risk may increase by 70% by using them, but if the risk is only 1/20000 to begin with, that makes it only 1/10000 which is still microscopic and not really any different.

P2 Errr....are you really that ignorant?? Skin cancer is the most common in the UK!! Don't believe me? Fine. Believe Cancer Research UK: <http://www.cancerhelp.org.uk/type/skin-cancer/about/skin-cancer-risks-and-causes>. The risk of getting skin cancer is NOT tiny. Thousands upon thousands die of it in the UK every year because of failure to protect themselves properly against the sun and yes, USE OF SUNBEDS. You can live in your bubble of denial if you want, but please don't make factually incorrect statements where people might see them and consequently take actions that may put them at risk.

After opening with a disclaimer, the statistics were manipulated in the initial post to ensure the increased risk seemed as minimal as possible (‘1/10000’). Repetition of the extreme case formulation (‘only’) emphasises this, as does describing the increased risk as ‘microscopic.’ This argument is completely undermined in the counter response by questioning the ignorance of the poster. The significance of skin cancer is supported again with reference to an authoritative source (‘Cancer Research UK’). The extreme case formulation (‘Thousands upon thousands die of it in the UK’) emphasises the significance of skin cancer and, as a consequence, the dangers of using sunbeds, as does the capitalisation (‘USE OF SUNBEDS’). By emphasising the dangers in this way, the second poster works to not only undermine the original poster’s argument, but also serves to justify their negativity which, in turn, works to strengthen and legitimise their opposition their position against using sunbeds.

***On the acceptable side of the boundary***

In an attempt to justify and legitimise their own behaviour, many of those in support of sunbeds represented their sunbed use as being acceptable. These attempts can be seen as a means drawn upon to manage the health concerns and associated negativity. For example, sunbed use was often described in minimal terms¸ often minimal use in terms of frequency: ‘Yes, there are links to skin cancer but I figure a couple of times a year can't hurt... ’. The post opens with a disclaimer, which works to anticipate and reject any potential criticism. The red-faced embarrassed smiley emoticon suggests awareness of an opposing negative reaction, or possibly even feelings of embarrassment. As well as limited frequency, minimal sunbed use was described in terms of a limited number of minutes:

P1 I wouldn't be using it loads maybe just 3 minutes a week if that 

P2 Even using a sunbed once a month increases the chance of you getting skin cancer by 40%. You’re really going to choose vanity over these odds?

Here, downgrading extreme case formulations (‘just’ and ‘if that’) work to emphasise the limited extent of their sunbed use. This argument is undermined and challenged in the counter post by highlighting the significance of the increased risk of even minimal usage. Using a sunbed was presented here as a simple choice between appearance and health, with the rhetorical question working to imply that this should be an obvious and straightforward decision. This is reinforced by the word ‘really,’ which implicitly works to express surprise and disapproval if the decision was for the former. This subtly works to express negativity towards sunbed use and undermine those in support of sunbeds and the decision to use them.

In an attempt to further justify and legitimise their own sunbed use, those in support of using sunbeds frequently made the distinction between their own minimal use and the more regular sunbed use of others, with acceptability implied for the former but not the latter:

P1 I see the concern and risks and danger of them, but I only use them for 3 or 4 minutes every other week, I think they only become a massive risk when you use them as part of your life for example some people use them every week of every year and rely on them. I think along with most things in life, everything in moderation is fine!

P2 After using them for a short amount of time (twice a week for a few weeks in the rainy summer days) for two years, maybe less, I’ve noticed A LOT more moles, some which are strange looking, so I dread to think what my skin would be like if I had carried on.

Again, the initial post opens with a disclaimer which rhetorically works to anticipate and deny any potential criticism about being ignorant about the risks. The regular sunbed use of others is emphasised by repetition of the extreme case formulation (‘every week of every year”). This is directly compared to their own minimal use, emphasised by the minimising extreme case formulation (‘I only use them for…’). Sunbed use as an addictive behaviour was implicitly alluded to and disassociated from by referring to the excessive and reliant use of ‘some people.’ The second poster then works to undermine this argument by explaining the substantial consequences sunbeds can have even after “a short amount of time.” The specific quantification works to emphasise how minimal their sunbed use had been.

***For a specific purpose (not just for a tan)***

Although many acknowledged the positive image of having a suntan, the majority of those in support of sunbed use provided a specific reason for using them that was more health-based. As well as helping to justify and defend their sunbed use, reference to various health benefits can also be seen as a means for helping manage awareness of the associated risks and the knowledge that sunbed tanning is typically considered an aesthetically motivated behaviour. A common claim was that using sunbeds helped provide a ‘base tan’ prior to going on holiday:

P1 Although sunbeds can be dangerous if abused they have benefitted my skin a lot, I used to just burn when I was out in the sun now I don’t burn at all because my skin has gotten more used to tanning 

P2 Surely they won’t stop you from burning, how would that work?

P3 They stop you from burning because if you build a gradual tan before you go abroad by using sunbeds you are less likely to burn as you already have a light tan.

P4 I don’t understand people who say this! You do realise even if you tan in the sun, it’s still burning your skin? You’re not stopping yourself from getting burnt at all.

Here, the initial post opened with a disclaimer which works to acknowledge and deny any potential criticism that they are unaware of the dangers in any way. Note however the qualifier (‘can be’) which implies a lack of certainty with regards to the risks. Also sunbeds were presented as only being dangerous ‘if abused’ and used excessively. The extreme case formulations (‘a lot’, ‘at all’) emphasises the benefits that sunbeds have afforded their skin in terms of no longer burning when exposed to the sun. The smiling emoticon can be seen as trying to elicit a positive response in the presence of potential disagreement or critique. The claim is directly challenged and undermined by questioning ‘how would that work?’ The subsequent explanation is again undermined by the articulation of a lack of understanding. By undermining the claimed benefits, the author of the last post (P4) can be seen as trying to derogate the knowledge, and thus the strength of the argument of those claiming to use a sunbed for this reason. In turn, this works to legitimise their negativity towards sunbeds. The most frequently claimed benefit was that using a sunbed helped improve a variety of skin conditions, for example:

P1 I only ever go on for a few minutes every week or so and it really, really helps my skin. Some doctors even recommend it for certain skin conditions, which just goes to show that (if used correctly) the benefits can outweigh the risks.

P2 With regards to using a sunbed for skin conditions, it's not really worth it apart from in the most severe cases. I have bad skin myself but would never risk getting cancer just for the sake of clearing my skin or being a little less pale.

The claim, and thus decision to use sunbeds, is strengthened in the initial post by repetition of the extreme case formulation (‘it really really helps’), which emphasises the extent sunbeds have benefited their skin. This claim is undermined in the counter post by arguing that the benefits are ‘not really worth it.’ This is strengthened by undermining the significance of the benefits (‘just for the sake of clearing my skin’). The initial claim is rhetorically warranted by citing corroboration from the authoritative source of a doctor (Dickerson, 1997). The health benefits were also validated by arguing that using a sunbed is similar to the UV (ultra-violet) light therapy offered as medical treatment for skin conditions at hospital:

P1 Hospitals have their own 'sunbeds' (not actually like normal sunbeds though) that people with skin conditions can use (my other half has eczema and was told by his doctor to use them).

P2 While it’s correct that UV treatment is used in the UK, it is a prescribed dose. The UV rays are considerably weaker (you don't tan) and it's such a short exposure the risk is tiny.

Whilst this argument is conceded in the counter response here, it is undermined and challenged by presenting the magnitude of the UV rays as significantly less than those emitted by sunbeds. The extreme case formulations (‘considerably’ and ‘tiny’) emphasise the insignificance of the risks compared to the risks associated with sunbeds.

**Discussion**

This study has provided insight into how sunbed tanning is socially represented, in an online context, with particular attention given to the discursive and rhetorical devices used. The findings confirm the centrality of health and beauty in the social representations of sunbed use identified in our previous study (authors), but also extends upon this by providing unique insight into how social representations of sunbed use are not static entities but are rhetorically worked up in order to perform particular purposes. More specifically, insight has been provided into how social representations of sunbed tanning are constructed, debated and disputed in order to enhance and defend the sunbed-related position of the poster; either in favour of or against using sunbeds. Those in support of sunbed use, in particular, worked to protect and defend their identities against a considerable amount of negativity they encountered in the forums. Findings have revealed how representing in the context of sunbed tanning is an active, dynamic process, performing specific argumentative, identity-protective functions. Both those against and those in support of using sunbeds drew upon similar discursive and rhetorical strategies to defend and enhance their sunbed-related position, as discussed below.

***Statistics and authoritative sources***

Those against using sunbeds often drew upon statistics and authoritative sources in constructing their representation of sunbed use as a risky behaviour, as well as in debating and disputing the alternative representations drawn upon by those in support of sunbeds. The WHO was most often drawn upon, for example, as a source to strengthen the credibility of the link between using sunbeds and skin cancer as definite and non-negotiable, as well as to highlight the significance of the risks and to warrant claims regarding the dangers. In contrast, statistics were sometimes used by those in support of sunbeds to present the risks as too small to warrant any real significant concern. Authoritative sources were also drawn upon to support their questioning of the legitimacy of the link between sunbed use and skin cancer. For example, one cited an ‘official cancer research UK website’ to strengthen their argument as to the insignificance of the risks. While attempts at logic-based arguments, as found in online data by Carcioppolo et al. (2014), were evident here in questioning the specific link between sunbed use and skin cancer, these proved controversial and were quickly disputed. In representing sunbed use as being for a specific purpose, some posters drew upon the medical profession to support claims regarding the benefits of using sunbeds, specifically the benefits of using sunbeds to help improve problematic skin.

***Citing personal experience***

Those against using sunbeds used personal experience as effective support for the dangers referring to, for example, friends and family who had suffered from skin cancer. In contrast, those in support of sunbeds cited personal examples of where sunbeds had not had a detrimental effect. In fact, cases were cited where using sunbeds actually had a positive effect on the skin in terms of its appearance. Those in support of sunbed use also frequently referred to, and drew upon their own personal experience in representing sunbed use as being for a specific purpose in terms of, for example, how using a sunbed helped to prevent their skin from burning. In contrast, those against sunbeds referred to their own health problems to demonstrate how, even though they suffered from problematic skin, for example, it was still not worthy of the risks. Personal experience of successfully using fake tan was drawn upon in articulating a lack of understanding for why people used sunbeds. Some in support of sunbed use drew upon their negative experiences of using fake tan to dispute this.

***Disclaimers, repetition and extreme case formulations***

Those against sunbeds frequently used extreme case formulations to emphasise the considered magnitude and significance of the dangers, especially the skin cancer risk. Those against sunbeds also used repetition, underlining, and capital lettering to support the rhetorical work of the extreme case formulations (e.g. ‘HUGE no’). These devices were also frequently employed by those against sunbeds to effectively emphasise the simple, definite nature of their decision to not use a sunbed. In contrast, those in support of sunbed use often drew upon downgrading formulations to emphasise the limited extent of their own use, and to downplay the significance of the risks. For example, minimising terms such as ‘just,’ ‘if that’ and ‘only’ were drawn upon when referring to their own sunbed use. The sunbed users’ language changed when talking about those who crossed the boundary, using maximising terms such as ‘massive’ to highlight the significance of the risks with regular use, and repetition (e.g. ‘every week of every year’) to highlight how often some used sunbeds. Disclaimers were also frequently used by those in support of sunbeds which typically worked to anticipate and deny any potential criticism that they were ignorant to the risks.

***Strengths, limitations and implications***

Online forums offered a useful, practical way of exploring discussion pertaining to sunbed use which afforded a number of specific benefits. The anonymous nature of the online forums arguably allowed exploration of ‘natural’ discussion as opposed to one where there is a researcher present. This benefit was apparent when the often insulting and hostile nature of some of the posts on the online forums were compared with the more restrained responses in our previous interview study (authors). A limitation of the current study was the lack of demographic information available on the gender and age of the authors of the posts; such data would have been useful in order to contextualise the analysis. We can however speculate from the pseudonyms used by the forum users (not included in the analysis here for the ethical reasons discussed in this paper) that the majority were female.

A particular strength of this study lies in the support it provides our previous research (authors) regarding the content of the social representations pertaining to sunbed use. This study has also extended upon this by drawing upon both SRT and DRP, although we recognise that the unique insight gained into the specific interactional work is preliminary and more research is needed. As well as demonstrating the importance of locating sunbed use within its wider social environment, the current research also provides support for the notion that social representations are actively engaged with in line with a person’s identity positioning (Joffe, 1996). Those in support of sunbed use worked to argumentatively defend their position when confronted with the negativity in the forums. The key theoretical contribution of this paper is that it provides support for the proposed benefits of drawing upon both SRT and DRP (Gibson, 2015) to explore specific functions social representations can serve within interactional contexts, addressing a criticism of SRT (Potter, 1996).

Parallels can be drawn between the current analysis’ identification of the discursive strategies and qualitative research exploring talk relating to other behaviours that pose a health risk, including smoking (Gough, Grogan, Fry & Conner, 2009) and men’s ephedrine use (Hall, Gough & Grogan, 2015) where attempts are made to present what they do as being acceptable, safe and even beneficial. Whilst findings are preliminary, suggestions can still be made for campaigns and interventions reducing sunbed use. One suggestion is that more statistics and authoritative sources should be used (as these are resources frequently drawn upon by those in support of sunbed use to counter the dangers) in campaign information communicating the risks. The argumentative nature of the sunbed user responses however indicates that it is essential to take the wider negativity surrounding this topic into consideration. Findings indicate, for example, that increased negativity may actually have a counter effect by perpetuating the argumentative orientation of the sunbed users’ responses; something which campaigners and policy makers working in this area need to consider. According to Joffe (2003), social representations may be difficult to change given that they are serving identity-protective functions. Findings indicate that this is likely to be exacerbated given the rhetorical nature of the representations, actively working to perform argumentative functions.

**References**

Abric, J. (1996). Specific processes of social representations. *Papers on Social Representations, 5*, 77-80.

Amir, Z., Wright, A., Kernohan, E. E., & Hart, G. (2000). Attitudes, beliefs and behaviour regarding the use of sunbeds amongst healthcare workers in Bradford. *European Journal of Cancer Care, 9*(2), 76-79. doi 10.1046/j.1365-2354.2000.00195.x

Attard, A., & Coulson, N. S. (2012). A thematic analysis of patient communication in Parkinson’s disease online support group discussion forums. *Computers in Human Behavior, 28*(2), 500-506. Retrieved from <http://dx.doi.org/10.1016/j.chb.2011.10.022>

Billig, M. (1991). *Ideology and opinions: Studies in rhetorical psychology*. London: Sage.

Boniol, M., Autier, P., Boyle, P., & Gandini, S. (2012). Cutaneous melanoma attributable to sunbed use: Systematic review and meta-analysis. *BMJ (Clinical Research Ed.), 345*, e4757. doi:10.1136/bmj.e4757

Braithwaite, D. O., Waldron, V. R., & Finn, J. (1999). Communication of social support in computer-mediated groups for people with disabilities. *Health Communication, 11*(2), 123-151. Retrieved from <http://dx.doi.org/10.1207/s15327027hc1102_2>

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101. Retrieved from <http://www.tandfonline.com/doi/abs/10.1191/1478088706qp063oa>

British Psychological Society (2013). *Ethics Guidelines for Internet – mediated research.* Available at <http://www.bps.org.uk/system/files/Public%20files/inf206-guidelines-for-internet-mediated-research.pdf>

Buchanan, H., & Coulson, N. S. (2007). Accessing dental anxiety online support groups: An exploratory qualitative study of motives and experiences. *Patient Education and Counselling, 66*(3), 263-269. Retrieved from <http://dx.doi.org/10.1016/j.pec.2006.12.011>

Cancer Research UK (2017). *Sunbeds.* Retrieved July 26, 2015, from[*http://www.cancerresearchuk.org/support-us/campaign-for-us/our-campaigning-successes/sunbeds*](http://www.cancerresearchuk.org/support-us/campaign-for-us/our-campaigning-successes/sunbeds)

Carcioppolo, N., Chudnovskaya, E. V., Martinez Gonzalez, A., & Stephan, T. (2014). In-group rationalizations of risk and indoor tanning: A textual analysis of an online forum. *Public Understanding of Science (Bristol, England),* doi: 10.1177/0963662514564930

Chamberlain, K., & Murray, M. (2009). Critical health psychology. In D. Fox, I. Prilleltensky & S. Austin (Eds.), *Critical Psychology: An Introduction (2nd ed.)* (pp. 144-159)*.* London, England: Sage Publications.

Coulson, N. S. (2014). Sharing, supporting and sobriety: A qualitative analysis of messages posted to alcohol-related online discussion forums in the united kingdom. *Journal of Substance use, 19*(1-2), 176-180. Retrieved from <http://dx.doi.org/10.3109/14659891.2013.765516>

Coursaris, C. K., & Liu, M. (2009). An analysis of social support exchanges in online HIV/AIDS self-help groups. *Computers in Human Behavior, 25*(4), 911-918. Retrieved from <http://dx.doi.org/10.1016/j.chb.2009.03.006>

Dennis, L. K., Lowe, J. B., & Snetselaar, L. G. (2009). Tanning behaviour among young frequent tanners is related to attitudes and not lack of knowledge about the dangers. *Health Education Journal, 68*(3), 232-243. Retrieved from http://journals.sagepub.com/doi/abs/10.1177/0017896909345195

Dickerson, P. (1997). ‘It’s not just me who’s saying this…’ The deployment of cited others in

televised political discourse. *British Journal of Social Psychology,* 36, 33-48. doi: 10.1111/j.2044-8309.1997.tb01117.x

Dickerson, P. (2012). *Social psychology: Traditional and critical perspectives.* Essex, England: Pearson Education Limited.

Gibson, S. (2015). From representations to representing: On social representations and discursive-rhetorical psychology. *The Cambridge handbook of social representations*, 210-223.

Gough, B., Fry, G., Grogan, S., & Conner, M. (2009). Why do young adult smokers continue to smoke despite the health risks? A focus group study. *Psychology and Health*, *24*(2), 203-220.

Hall, M., Grogan, S., & Gough, B. (2015). ‘It is safe to use if you are healthy’: A discursive analysis of men’s online accounts of ephedrine use. *Psychology & health*, *30*(7), 770-782.

Hewitt, J. P., & Stokes, R. (1975). Disclaimers. *American Sociological Review, 40*(1), 1-11.

Hillhouse, J. J., Adler, C. M., Drinnon, J., & Turrisi, R. (1997). Application of azjen's theory of planned behavior to predict sunbathing, tanning salon use, and sunscreen use intentions and behaviors. *Journal of Behavioral Medicine, 20*(4), 365-378.

Horrocks, C., & Johnson, S. (2012). *Advances in health psychology: Critical approaches*. New York: Palgrave Macmillan.

Hunt, Y., Augustson, E., Rutten, L., Moser, R., & Yaroch, A. (2012). History and culture of tanning in the united states. In C. J. Heckman & S. L. Manne (Eds.), *Shedding light on indoor tanning* (pp. 5-31). New York: Springer Science & Business Media.

Jaspal, R., Nerlich, B., & Koteyko, N. (2012). Contesting science by appealing to its norms: Readers discuss climate science in the daily mail. *Science Communication,* 35(3), 383-410. doi*:* 10.1177/1075547012459274

Jefferson, G. (1991). List construction as a task and resource.In G. Psathas (Ed.), *Interactional competence* (pp. 63-92). New York, NY: Irvington Publishers.

Joffe, H. (1996). AIDS research and prevention: A social representational approach. *British Journal of Medical Psychology, 69*(3), 169-190.

Joffe, H. (1999). *Risk and 'the other.'* Cambridge, UK: Cambridge University Press.

Joffe, H. (2002). Social representations and health psychology. *Social Science Information, 41*(4), 559-580.

Joffe, H. (2003). Risk: From perception to social representation. *British Journal of Social Psychology, 42*(1), 55-74.

Jowett, A., Peel, E., & Shaw, R. (2011). Online interviewing in psychology: Reflections on the process. *Qualitative Research in Psychology, 8*(4), 354-369.

Jowett, A. (2015). A case for using online discussion forums in critical psychological research. *Qualitative Research in Psychology, 12*(3), 287-297. doi: 10.1080/14780887.2015.1008906

Knight, J. M., Kirincich, A. N., Farmer, E. R., & Hood, A. F. (2002). Awareness of the risks of tanning lamps does not influence behavior among college students. *Archives of Dermatology, 138*(10), 1311-1315.

Lake, J. R., Thomson, C. S., Twelves, C. J., & Davies, E. A. (2014). A qualitative investigation of the motivations, experiences and views of female sunbed users under the age of 18 in england. *Journal of Public Health (Oxford, England), 36*(1), 56-64.

Moloney, G., & Walker, I. (2002). Talking about transplants: Social representations and the dialectical, dilemmatic nature of organ donation and transplantation. *British Journal of Social Psychology, 41*(2), 299-320.

Monfrecola, G., Fabbrocini, G., Posteraro, G., & Pini, D. (2000). What do young people think about the dangers of sunbathing, skin cancer and sunbeds? A questionnaire survey among italians. *Photodermatology, Photoimmunology & Photomedicine, 16*(1), 15-18.

Murray, C. D., & Turner, E. (2004). Health, risk and sunbed use: A qualitative study. *Health, Risk & Society, 6*(1), 67-80.

NHS Choices (2017a). *Skin cancer (non-melanoma).* Retrieved January 20, 2017, from <http://www.nhs.uk/conditions/Cancer-of-the-skin/Pages/Introduction.aspx>

NHS Choices (2017b). *Skin cancer (melanoma).* Retrieved January 20, 2017, from <http://www.nhs.uk/Conditions/Malignant-melanoma/Pages/Introduction.aspx>

Pomerantz, A. (1986). Extreme case formulations: A way of legitimizing claims. *Human Studies, 9*(2-3), 219-229. doi: 10.1007/BF00148128

Potter, J. (1996). *Representing reality: Discourse, rhetoric and social construction*. London, UK: Sage Publications Ltd.

Rodham, K., & Gavin, J. (2006). The ethics of using the internet to collect qualitative research data. *Research Ethics Review, 2*(3), 92-97.

Sinclair, C., & World Health Organization. (2003). Artificial tanning sunbeds: Risks and guidance. Retrieved from <http://apps.who.int/iris/bitstream/10665/42746/1/9241590807.pdf>

The Sunbed Association (TSA) (n.d.) *UV light.* Retrieved July 25, 2016, from <http://www.sunbedassociation.org.uk/UV_Tanning/UV_Light.aspx>

Wehner, M. R., Shive, M. L., Chren, M. M., Han, J., Qureshi, A. A., & Linos, E. (2012). Indoor tanning and non-melanoma skin cancer: systematic review and meta-analysis. *Bmj*, *345*, e5909.

Widdicome, S., & Woofitt, R. (1995). *The language of youth subcultures: Social identity in action.* London: Harvester Wheatsheaf.

World Health Organisation (2017a). *Skin cancers. Retrieved* January 20, 2017, from <http://www.who.int/uv/faq/skincancer/en/index1.html>

World Health Organisation (2017b). *Sunbeds.* Retrieved January 20, 2017, from <http://www.who.int/uv/faq/sunbeds/en/index5.html>