

Skin Cancer Risk Factor Awareness among the Slovenian Population in 2011 and 2019

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Abstract

Introduction: Awareness of skin cancer risk factors can vary significantly over time within the population. With this study we tried to illuminate some of the reasons for this dynamic.

Methods: In 2011 and again in 2019, the Slovenian Dermatovenereological Association surveyed 550 and 553 Slovenes at Dermatovenereological Clinic, respectively, about their awareness of skin cancer risk factors. Concurrently, we examined and compared the amount of skin cancer awareness content available to the Slovenian public through internet, TV, radio, and newspapers in the year preceding each survey.

Results: The 2019 survey revealed a significant decline in Slovenians' knowledge about skin cancer risk factors compared to previous years (23,20% to 54,68% decline in individual categories), likely resulting from reduced skin cancer awareness campaign efforts by Slovenian dermatovenereologists after 2015. Furthermore, there were 606 publications on skin cancer risk factors in the mass media before the 2011 survey, but only 345 before the 2019 survey, marking a 43% decrease.

Conclusions: Our data underscores the need for ongoing public health initiatives and campaigns to educate the public on skin cancer prevention. It also emphasizes the importance of sufficient health-related publications in accessible media to enhance awareness, ultimately leading to a more informed and healthier population.

Keywords

Skin cancer prevention, Skin cancer risk factors, Mass media campaigns, Public health.

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Introduction

Several risk factors contribute to skin cancer genesis, such as hereditary factors, skin phototype, UV radiation exposure and number of atypical moles, among others [1]. Although these are all well known among physicians, it is key that the general population

also gets familiar with the same concepts of risk factors for the sake of prevention, which can be achieved through national public health campaigns and different media outlets and publications.

Patients and Methods

In 2011, the Slovenian Dermatovenereological Association conducted a survey involving 550 Slovenes. Participants responded to questions related to the awareness of risk factors for the development of skin cancer [2,3]. In 2019 the survey was repeated at Dermatovenereological Clinic, University Medical Centre Ljubljana with 553 participating Slovenes responding to the same questions as in 2011. At the same time, we looked at the number of publications intended for the Slovenian general public regarding the topic of skin cancer risk factor awareness on the internet, TV, radio and in newspapers, which were published in the year before both surveys and compared the results.

Results

In 2011 the least recognized factor among the Slovenian population was the individual's phototype, with nearly one-third of those surveyed being unaware of its impact. Conversely, the factor of UV radiation was the most acknowledged (88,3%). Slovenian men had a lesser understanding of the risk factors for skin cancer compared to Slovenian women. On average, the women knew 8,2% more in all categories (Figure 1).

The findings revealed that in 2019, Slovenians' awareness of skin cancer risk factors had significantly diminished compared to their knowledge in 2011. The understanding of the importance of skin phototype was again the least know factor, but this time only 33% of people surveyed knew about its relation to skin cancer, which is a 51.54% decrease from 2011. Additionally, in the year 2019 the awareness of heredity as a skin cancer risk factor saw the most significant decline out of all risk factors with a 54.68% drop. The most acknowledged risk factor in 2019 was again UV radiation (65,30%), but with a 26,10 % decrease from the year 2011 (88,3%). The smallest drop in risk factor awareness was in the moles category. In 2019, 64,90% of surveyed people knew about the association with number of moles and skin cancer. That being said, this still represents a 23,20% drop from the year 2011 (Figure 1).

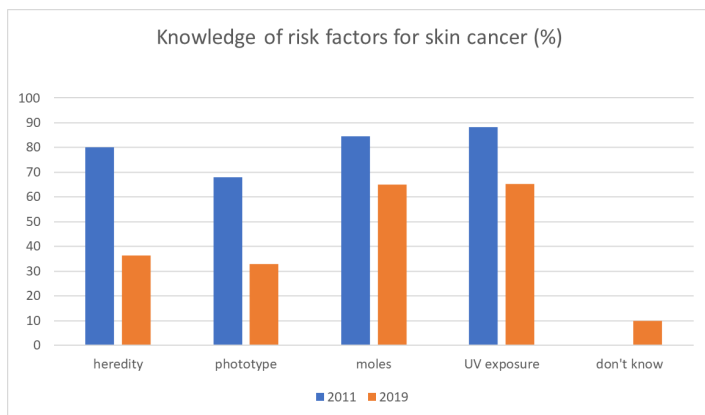


Figure 1: Knowledge of skin cancer risk factors among the Slovenian population in 2011 and 2019.

Notably, in 2019 almost ten percent of Slovenians (9.9%) were completely unaware of any risk factors for skin cancer. The 2019

survey again indicated that women are more informed about the risk factors for skin cancer than men, by a significant 24% more (Figure 1).

Interestingly, in the year prior to 2011 survey, 606 publications regarding skin cancer risk factors for the general public were published, whereas in the year prior to 2019 survey, only 345, or as much as 43% less.

Additionally, the sources where these publications were published significantly changed in the year 2019 in comparison to 2011. In the year prior to 2011 survey, the majority of publications (65%) came from newspapers, with internet sources only representing 21%. In the year prior to 2019 survey, the internet publications represented the majority with 54%, which is more than twice and a half the share they had in 2011. Newspaper magazines still represented a considerable share with 42%, albeit a smaller one than in 2010-2011. Radio and TV were used in less than 5% as sources to educate on skin cancer risk factors in the year 2018-2019 (Figure 2).

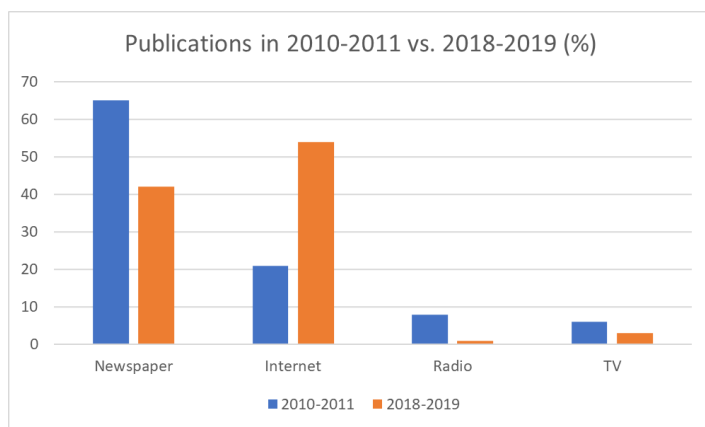


Figure 2: Publications about skin cancer risk factors in the year 2010-2011 vs. 2018-2019 in Slovenian media (%).

The majority of publications in mass media about skin cancer awareness were published in the summer months in the year 2010-11, the same as in 2018-19 (Figure 3, 4).

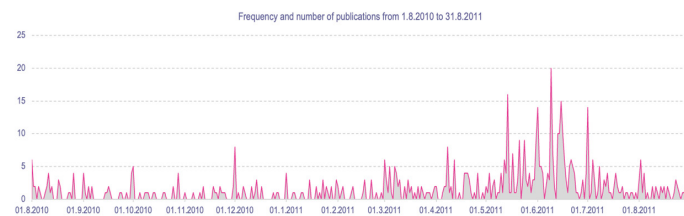


Figure 3a (graph): Frequency of publications about skin cancer awareness from 1.8.2010 to 31.8.2011 in Slovenian mass media.

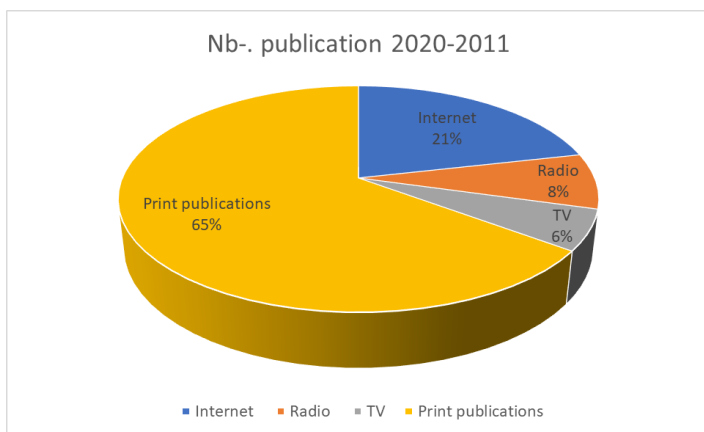


Figure 3b (graph): Frequency of publications about skin cancer awareness from 1.8.2010 to 31.8.2011 in Slovenian mass media.

Figure 3c: Frequency of publications about skin cancer awareness from 1.8.2010 to 31.8.2011 in Slovenian mass media.

Typ publication 2010- 2011	Nb. publication	% publication
Internet	130	21%
Radio	48	8%
TV	35	6%
Print publications	393	65%

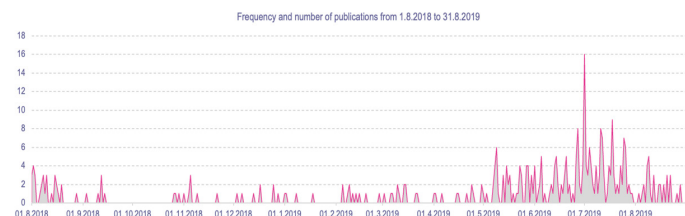


Figure 4: Frequency of publications about skin cancer awareness from 1.8.2018 to 31.8.2019 in Slovenian mass media.

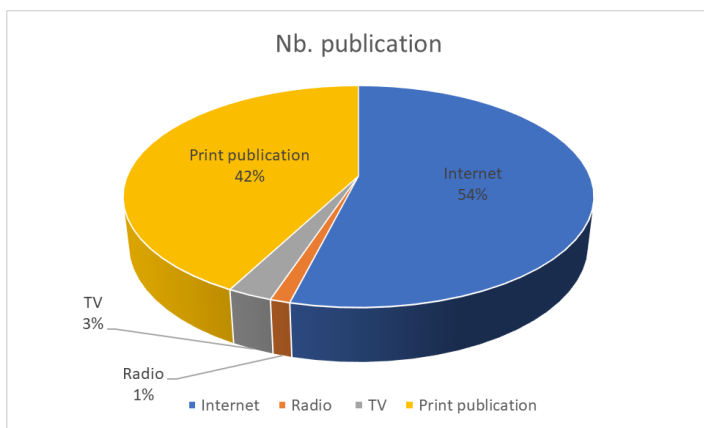


Figure 4b (graph): Frequency of publications about skin cancer awareness from 1.8.2018 to 31.8.2019 in Slovenian mass media.

Figure 4c: Frequency of publications about skin cancer awareness from 1.8.2018 to 31.8.2019 in Slovenian mass media.

Typ publication 2018-2019	Nb. publication	% publication
Internet	186	54%
Radio	4	1%
TV	9	3%
Print publication	146	42%

Discussion

Mass media campaigns have the potential to positively impact health behaviours across broad populations [4-6]. The findings of an Australian study indicate how a skin cancer prevention campaign from 2007 to 2010 may have influenced a shift in how people perceive tanning in a more negative way. Additionally, the fluctuating pattern of campaign recall over time highlights the importance of conducting these campaigns repeatedly to maintain their impact, as the study has shown a significantly lesser recall of the information in the pre-campaign phases as opposed to during-campaign [7].

A study by Smith et. al showed similar results, where recall of the information presented in the mass media campaigns to promote sun protection in Australia rose significantly after each campaign and dropped to near baseline levels between campaigns [8], again showing the significance of repeating the campaigns in regular intervals.

Another study from Australia examined behavioural risk factors for skin cancer in a population of 11,589 adults between 1987 to 2002 in correlation with a skin cancer prevention program called SunSmart. Significant long-term improvements were shown in prevention attitudes and behaviours such as increased usage of sunscreen and hat-wearing [9].

Between 2008 and 2015, dermatovenereologists in Slovenia conducted a series of initiatives to raise awareness among Slovenians about the importance of UV radiation in the development of skin cancer. The survey conducted in 2011 revealed that these initiatives were relatively successful, as many Slovenians were knowledgeable about the risk factors for skin cancer. However, activities aimed at highlighting the risk factors for skin cancer decreased after 2015. The survey conducted among Slovenians in 2019 indicated that the overall knowledge of the general public about the risk factors for skin cancer is considerably lower than in previous years, which is most likely due to aforementioned fewer initiatives about awareness of skin cancer risk factors by Slovenian dermatovenereologists after 2015. These findings correlate with the results from the two previously mentioned Australian studies, where the absence of media campaigns resulted in lesser knowledge about skin cancer risk factors [7,8]. Additionally, because the number of Slovenian publications for the general public regarding skin cancer risk factors almost halved from 2011 to 2019, we think this is also one of the main contributing factors why the knowledge of the population about skin cancer risk dropped by a significant margin in all categories.

Conclusion

Our data shows the importance of regularly informing the general population through public health initiatives and campaigns about prevention on skin cancer risk factors. It also highlights the necessity of an adequate amount of publications regarding public health in the accessible media in order to contribute to skin cancer prevention and thus keep the general population more knowledgeable and consequentially healthier.

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