

CADTH RAPID RESPONSE REPORT:  
SUMMARY WITH CRITICAL APPRAISAL

# Biopsy for Adults with Suspected Skin Cancer: A Rapid Qualitative Review

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## Abbreviations

PLA	Pigmented lesion assay
RNA	Ribonucleic acid

## Context and Policy Issues

Melanoma is the most serious and deadly form of skin cancer. Approximately 7800 people in Canada will be diagnosed with melanoma in 2019, and 1300 will die from the disease.<sup>1</sup> The incidence rate for melanoma has steadily increased for both males and females, and it is the fourth most common cancers affecting young adults aged 15-29 and adults aged 30-49.<sup>1</sup>

The survival rate for melanoma is high when it is detected early. Melanoma is typically visible on the surface of the skin in the form of a lesion or mole, and is often detected by patients themselves.<sup>2</sup> However, the diagnosis of melanoma based on clinical features can be challenging, with the estimated sensitivity of experienced dermatologists being approximately 70 percent.<sup>2</sup> Biopsy, which completely excises the suspected lesion or mole allows for confirmation of a suspected diagnosis, can also function as a surgical treatment for the condition depending on the extent of the disease.

New non-invasive tests such as the pigmented lesion assay (PLA) by DermTech are becoming available that may identify atypical lesions or moles at high risk for melanoma. The test collects a skin sample using an adhesive patch, and RNA from the collected skin cells is examined using gene expression testing to identify early changes associated with melanoma.<sup>3</sup> A negative test result can be used to rule out melanoma, and a positive test result can indicate the need to proceed to biopsy for further investigation. By ruling out those lesions or moles that are melanoma, it may reduce the number of unnecessary biopsies.

The purpose of this report is to describe the experiences and perspectives of people with suspected skin cancer and their health care providers on biopsy and the diagnostic process for skin cancer.

## Research Questions

Two sets of research questions guided this review:

- How do people with suspected skin cancer view skin biopsy? What are their perspectives on, expectations of, and preferences for skin biopsy and the diagnostic process for suspected skin cancer?
- How do health care providers who care for people with suspected skin cancer view skin biopsy? What are their perspectives on, expectations of, and preferences for with skin biopsy and the diagnostic process for suspected skin cancer?

## Key Findings

This review used thematic synthesis to synthesize the results of 12 included publications and described how people with suspected skin cancer and their health care providers experienced the process of diagnosis.

People who were diagnosed with skin cancer were often the ones who noticed a suspicious looking lesion or mole that triggered their diagnosis. They described experiencing delays in being diagnosed because they did not immediately present to a health care provider for a variety of reasons, including being busy or not thinking it was serious. Other times people experienced a delay in being diagnosed because their physician did not order further testing or offered them reassurances that their lesions were non-cancerous. People with a concerning lesion or mole were not always reassured by their health care providers words and instead persisted in getting diagnosed by seeking a second opinion or by continuing to bring their concerns forward to their health care provider. Health care providers raised worries about the impact of referring people who turn out to not have skin cancer on the health care system.

Once diagnosed, people with skin cancer described how skin cancer was an emotionally destabilizing and shocking experience. Being diagnosed with skin cancer raised fears of death and about the future. People had to at once navigate their treatment while coping with their feelings.

With clear information and adequate time for consultation, communication with health care providers left people diagnosed with skin cancer felt supported and informed and able to navigate their treatment. The importance of communication with health care providers in the experiences of those diagnosed with skin cancer highlights the emotional and physical needs of skin cancer patients.

After treatment, people who had been diagnosed found themselves continuing to watch their bodies and coping with feelings of uncertainty and anxiety about their future. People who had been treated described how waiting for test results was particularly fraught with anxiety during the follow-up period.

## Methods

### Literature Search Methods

A limited literature search was conducted by an information specialist on key resources including MEDLINE, CINAHL, and Scopus. The search strategy was comprised of both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. The main search concepts were skin cancer and biopsy/diagnosis. Search filters were applied to limit retrieval to qualitative studies. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2009 and October 16, 2019.

### Selection Criteria and Methods

One reviewer screened citations and selected studies. In the first level of screening, titles and abstracts were reviewed and potentially relevant articles were retrieved and assessed for inclusion. The final selection of full-text articles was based on the inclusion criteria presented in Table 1.

**Table 1: Inclusion Criteria**

<b>Sample</b>	Q1: Adults with suspected skin cancer eligible for or having received a skin biopsy (any method) Q2: Health care providers involved in the diagnosis of people with suspected skin cancer
<b>Phenomenon of Interest</b>	Skin biopsy using any method (e.g., shave biopsy, punch biopsy, excisional biopsy) or biopsy avoidance technology (e.g., pigmented lesion assay) for suspected skin cancer, and the diagnostic process for skin cancer
<b>Design</b>	Any qualitative design using qualitative data collection and analysis methods
<b>Evaluation</b>	Q1: From patients' perspective, issues emerging from the literature that relate to the research questions, i.e., perspectives on, expectations of, and experiences of skin biopsy and the diagnostic process for suspected skin cancer. As appropriate, differences will be explored by patients' characteristics, for example, by age, location of skin biopsy.  Q2: From health care providers' perspective, issues emerging from the literature that relate to the research questions, i.e., perspectives on, expectations of, and experiences with skin biopsy and the diagnostic process for suspected skin cancer. As appropriate, differences will be explored by providers' characteristics, for example: type of health care provider and practice setting.
<b>Research type</b>	Primary qualitative studies, qualitative component of mixed-method studies

### Exclusion Criteria

Articles were excluded if they did not meet the inclusion criteria outlined in Table 1, were duplicate publications reporting on the exact same data and same findings or were published prior to 2009.

### Critical Appraisal of Individual Studies

One reviewer assessed quality in terms of the credibility, trustworthiness and transferability of the included qualitative studies and the qualitative component of mixed method studies using the ten items from the Critical Appraisal Skills Programme (CASP) Qualitative Checklist.<sup>4</sup> Results of the critical appraisal were used to understand the methodological and conceptual limitations of the included publications in specific relation to this review. In particular, the critical appraisal contributed to the analysis by identifying the limits of transferability of the results of included publications to this review.

### Data Analysis

The included publications were analyzed by one reviewer using thematic synthesis.<sup>5</sup> A first reading of the included articles identified a sample of “data rich” studies (n=4) that were judged to have appropriately detailed and developed analyses that were supported by the data and were relevant to this review. Line-by-line descriptive coding of this sample of articles in NVivo 11 was conducted to inductively identify and describe key concepts and experiences relating to the experiences of being diagnosed with skin cancer. Using this set of inductive codes and concepts, the remaining included studies were read and coded, with codes being grouped and modified as concepts and findings took shape. Analysis continued until themes were described and supported by data from the included publications. During the analysis, the reviewer reflected on issues with transferability and the results of the critical appraisal to aid with interpretation. The objective of the analysis was to describe how people with suspected skin cancer and their providers experience the process of diagnosis, including biopsy.

## Summary of Evidence

### Quantity of Research Available

A total of 612 citations were identified in the literature search. Following screening of titles and abstracts, 567 citations were excluded and 15 potentially relevant reports from the electronic search were retrieved for full-text review. Of these 15 potentially relevant articles, 3 were excluded and 12 publications reporting on ten studies met the inclusion criteria and were included in this report. Appendix 1 presents the PRISMA<sup>6</sup> flowchart of the study selection process.

### Summary of Study Characteristics

Details regarding the characteristics of included publications are provided in Appendix 2 and the characteristics of the participants of included studies in Appendix 3.

#### *Study Design and Data Collection*

Five studies reported on in six publications did not specify the study design used.<sup>7-12</sup> One study was used meta-narrative study design,<sup>13</sup> and another study was used a grounded theory design.<sup>14</sup> One study reported on in two publications was a exploratory sequential mixed method study,<sup>15,16</sup> and another was a mixed method study of which the design was not stated.<sup>17</sup>

Five studies reported on in six publications used semi-structured interviews to collect data.<sup>7-9,12,14,18</sup> Two studies used publicly available on-line accounts<sup>10,13</sup> and one study used focus groups.<sup>11</sup> Of the mixed method studies, one collected data using a cross-sectional survey with open-ended questions and focus groups,<sup>15,16</sup> and another used questionnaires and interviews.<sup>17</sup>

#### *Country of Origin*

Four studies were from the UK,<sup>9,12,14,17</sup> three studies reported on in four publications were from the USA,<sup>10,11,15,16</sup> and two studies were from Australia.<sup>13,18</sup> One study reported on in two publications was from Sweden.<sup>7,8</sup>

#### *Population and Interventions*

This review reports on the data from 118 patient participants, 336 publicly available patient accounts, and 183 health care providers.

Five studies reported on in six publications included patient participants<sup>7-9,11,12,14,17</sup> One study included people with suspected melanoma,<sup>9</sup> and another included people who had a new diagnosis of non-melanoma skin cancer.<sup>17</sup> Four studies reported on in five publications included people who were melanoma survivors or were in follow-up after treatment for melanoma.<sup>7,8,11,12,14</sup> Two studies used publicly available accounts from people who had melanoma.<sup>10,13</sup>

Three studies reported on in four publications included health care providers who cared for patients with melanoma.<sup>9,15,16,18</sup> One study reported on in two publications included dermatopathologists,<sup>15,16</sup> and another included general practitioners.<sup>9</sup> One study included dermatologists, surgical oncologists and general practitioners working at one of two melanoma speciality clinics.<sup>18</sup>

## Summary of Critical Appraisal

Overall, the included publications were assessed to be of low-moderate quality. Details of the critical appraisal can be found in Appendix 4.

The absence of well-described findings that were supported by data was a key concern affecting the credibility of the included publications. Studies that provided limited or no data supporting for their findings.<sup>10,17</sup> or included data in tables but findings were not described or developed in the main text<sup>9,15,16,18</sup> were not able to be judged as internally consistent and coherent.

The transferability of the included publications was limited due to the focus and research objectives of the included studies. Four publications were judged to be transferable to this review as they substantially collected and reported on data about experiences around diagnosis.<sup>7,10,13,17</sup> Transferability was limited in publications that focused on patients' experiences of melanoma in general and from treatment to survivorship. No studies explored in depth the questions around the experience of biopsy and diagnostic procedures that were of specific interest in this review.

## Summary of Findings

*People who were diagnosed with skin cancer stated they were often the ones who noticed a suspicious looking lesion or mole that triggered their diagnosis*

When people who had been diagnosed with skin cancer recounted how they were diagnosed, many stated that they were the ones who noticed a lesion or mole that raised their concern.<sup>10,13,17</sup> This was typically described as something that did not heal or looked suspicious.<sup>10,17</sup> Sometimes it was a close friend or family member who noticed a concerning lesion or mole when the person was changing clothing or wearing a swim suit.<sup>10,17</sup> Several people who had been diagnosed with skin cancer described that it was their hairdresser who suggested that they ask their doctor about a lesion or mole.

Some people who reported that their primary care provider or a dermatologist noticed the suspicious mole or lesion, but these accounts were much less frequent than those who made the observation themselves.<sup>10,17</sup>

*People who were diagnosed with skin cancer described experiencing delays in their diagnosis because they put off seeking medical care or because their physician did not diagnose them*

Despite being the ones who typically identified a concerning skin feature, people who eventually received a diagnosis of skin cancer did not always immediately seek medical care. People described not visiting a health care provider for a suspicious lesion or mole for a variety of reasons.<sup>10,13,17</sup> Sometimes they stated that this was because they were not aware that it could have been skin cancer.<sup>10,13</sup> Others attributed their symptoms to the natural process of aging: "I'd got a spot that was reoccurring and I didn't know whether it was just old age or whether it was something that was untoward... I didn't really see it as a priority."<sup>17</sup> Additional explanations included that they were too busy to seek care, or that they thought it was not a serious enough issue with which to 'bother' their doctor.<sup>13</sup> When their care-seeking behaviour led to a delay in diagnosis, people who had melanoma described regretting not consulting their doctor sooner.<sup>10</sup>

When people who had skin cancer brought their initial concerns to their general practitioners, they described that they sometimes responded by issuing reassurances that their symptoms were non-cancerous.<sup>13,14</sup> Among those ultimately diagnosed with melanoma, some people stated that their doctors did not order diagnostic tests.<sup>10,11</sup> Others were told that the changes in moles were due to normal changes that occur during pregnancy.<sup>13</sup>

However, people persisted by bringing their concerns back to their general practitioner or by seeking a second opinion.<sup>10,13,14</sup> Physicians' reassurances were not always trusted as a medical opinion, but instead left people feeling dismissed.<sup>13</sup> As one person described:

I had to actively push both my GP and then dermatologist to have the mole removed and they both said it was 99% sure and likely [not] to be a problem. Well it was a problem and I cannot express the mix of feelings that I caught it really in the nick of time.<sup>13</sup>

The perspectives of some health care providers offer some insight into the phenomenon of delays in diagnosis. When asked about the role of early detection, some expressed doubt that early diagnosis of melanoma affected clinical outcomes. As one general practitioner expressed it: “[o]bviously it’s [early diagnosis] to be encouraged... the difficulty is we see an awful lot of pigmented lesions... I’m aware that the diagnosis of [melanoma] has gone up, whereas the overall mortality from it has not...”<sup>9</sup> Similarly, health care providers saw the increase the number of patients referred for diagnosis and biopsy who turn out not to have melanoma as “clogging up the system.”<sup>9</sup>

But patients who were not referred and who did have melanoma described their reactions after being dismissed: “I was angry... I had been questioning this spot for a year and had been told it was nothing and not worry about it. So learning that it was melanoma, I was angry.”<sup>11</sup> When their cancer was not diagnosed in a timely fashion, they people with skin cancer expressed anger, resentment and frustration.<sup>10,13,14</sup>

*Being diagnosed with skin cancer was an emotionally destabilising and shocking experience that raised fears of death and anxiety*

The experience of being diagnosed with skin cancer was incredibly emotional for most people.<sup>8,10,11,14,17</sup> The wait for results was difficult and people described struggling with anxiety as they waited.<sup>10</sup> With the diagnosis, people felt disoriented<sup>8</sup> and that their lives had been thrown into chaos and disorder.<sup>8,7,10</sup>

A diagnosis of cancer, was viewed by many as “a death sentence” and brought with it fears of dying, particularly for those with young children and families.<sup>8,10,11,14,17</sup> By and large, people were not prepared for a diagnosis of cancer, even when they had been the ones to bring the suspicious lesion forward.<sup>8</sup> Many described being in shock at the diagnosis,<sup>8,10,14</sup> particularly for those who had been previously assured that it was not cancer.<sup>13</sup> People reflected on how they might have brought on the skin cancer through their behaviours (e.g., not using sun protection, or visiting tanning beds).<sup>10</sup> Those who did engage in sun safety behaviours or saw themselves as not exposed or at risk expressed shock at the diagnosis, as it came as more of a surprise.<sup>10</sup>

*Communication with health care providers affected whether people diagnosed with skin cancer felt supported and informed and able to navigate their treatment*



Communication with health care providers came up in people's accounts of their experiences of being diagnosed with skin cancer. People diagnosed with skin cancer described how being listened to and having enough time and attention from their physicians left them feeling respected and prioritized.<sup>7</sup> As one patient said, "I had a really good encounter. That they really, that she [physician] took her time."<sup>7</sup> People who had been diagnosed with skin cancer appreciated when health care providers validated their feelings and concerns.<sup>10</sup> Being able to share their fears and feelings with their health care provider was an important form of support,<sup>12,14</sup> highlighting the emotional dimensions of cancer care.

Accounts of poor communication included feeling not listened to or having rushed visits with health care providers,<sup>7</sup> but also pointed to times where care pathways were not clear to patients. Some were notified of the test results before receiving a diagnosis from their physicians.<sup>13</sup> For example, one person diagnosed with melanoma described that "[t]he oncology department called to make an appointment before I knew the results, which was an unfortunate way to find out it was indeed malignant."<sup>13</sup> People who were going through the process of being diagnosed sometimes turned to their contacts who worked in the health care system to help them navigate their care.<sup>7</sup>

Poor communication raised anxiety for patients and affected their ability to become informed and to make treatment decisions.<sup>10</sup> People described appreciating being informed by their health care providers, and consistently described the need for clear and direct information – "the facts". One person said, "that I appreciate a lot, the straightness in this. [information from health care provider] Yes. Straight, straight, clear messages."<sup>7</sup>

*After treatment, people who had been diagnosed found themselves continuing to watch their bodies and coping with feelings of uncertainty and anxiety about their future*

After being treated for skin cancer, many people described searching for solid ground and to understand what happens next, balancing their emotions and feelings of uncertainty and fear of the future with moving forward.<sup>8 12</sup>

People expressed their fears of cancer, raising concerns about the future and its return.<sup>10</sup> They described being watchful and checking for new moles or suspicious lesions,<sup>8 10</sup> and taking action by seeing their dermatologist more regularly.<sup>10 14</sup> Being able to do something to help themselves<sup>7,14</sup> helped to give people a sense of control in light of an uncertain future:

My regular 3 month appointments (trying to keep a sense of humor about all of this, I call these appointments "the harvest," as she tends to take a new mole each visit) with my dermatologist, along with taking measures to avoid sun exposure, are what I have to do to keep this from coming back and killing me.<sup>13</sup>

People described trying to find the positive in their cancer experience, and turning their focus to their families and what was important and meaningful in their lives.<sup>8,10</sup> One participant described how the "[cancer experience] has influenced life in a positive direction, as I see it... I feel much younger today, and I think I seize the moments in another way. You become aware of how fast you may lose it [life]."<sup>8</sup>

Living in the moment was used by people for an antidote for living with uncertainty,<sup>8</sup> particularly around the times of waiting for the results of follow-ups: "...all I can do to focus on life and wait the results." For others, anxiety around the potential for reoccurrence was

ever-present. One participant in a focus group highlighted this and said: “[y]ou listen to every one of us [focus group participants], the anxiety is the one thing that really got us. It’s the anxiety, and the anxiety continues.”<sup>11</sup> Health care providers saw this too, recognizing that patients sought to increase or maintain frequency of follow-up visits to alleviate their anxiety.<sup>18</sup>

### Limitations

A key limitation of this review is that it primarily included the views of people who had a diagnosis of and survived melanoma and the providers who treated them. One study included people with suspected skin cancer. As a result, this review provides limited information on the views of those not diagnosed, particularly those who did not seek health care, or those who underwent diagnostic testing but received a negative diagnosis. People who had these omitted or understudied experiences may have substantially different views of the diagnostic process that are not captured here.

An additional limitation of this review is that it provides no direct information about how people with suspected skin cancer experienced the biopsy procedure itself. The experiences of biopsy were not reported on in studies that explored patients’ experiences around diagnosis.

### Conclusions and Implications for Decision or Policy Making

This review used thematic synthesis to synthesize the results of 12 included publications and described the perspectives of people had been diagnosed with skin cancer and their health care providers on the process of being diagnosed. The key findings of this review echo those of two published qualitative syntheses about the experiences of people with skin cancer.<sup>19,20</sup> Barker<sup>19</sup> similarly found that people delayed seeking medical care for their suspicious lesions and often minimized their significance. Both syntheses found that a diagnosis of skin cancer was emotional for people and involved feelings of fear, anxiety and shock.<sup>19,20</sup> The synthesis by Bath-Hextall<sup>20</sup> also identified the lingering uncertainty and anxiety that people who had skin cancer experience post-treatment.

The review provides limited information on biopsy as a procedure itself. The absence of information on biopsy could reflect researchers’ assumptions that biopsy is ‘not a big deal’, or it could be that, in the context of receiving a diagnosis of skin cancer, the biopsy itself may become less notable. The findings of this review point to the ways that, when they seek medical care, people who have noticed a concerning lesion or mole sometimes persist in getting diagnosed. Reassurances from health care providers did not appear to satisfy a desire for concrete clinical information, suggesting that people who have a concerning lesion are likely to appreciate tests that provide them with this clinical and diagnostic information.

In the limited information on the perspectives of health care providers on referring patients for further testing, health care providers raised worries about the impact of referring people who turn out to not have skin cancer on the health care system. This suggests that physicians may be balancing clinical and non-clinical considerations when referring patients for further diagnostic investigations for skin cancer.

The wait period for diagnosis was emotionally challenging for people, who were often left feeling anxious and disoriented. This points to how reduction in the length of time between testing and receiving results affects the emotional state of people waiting for test results.

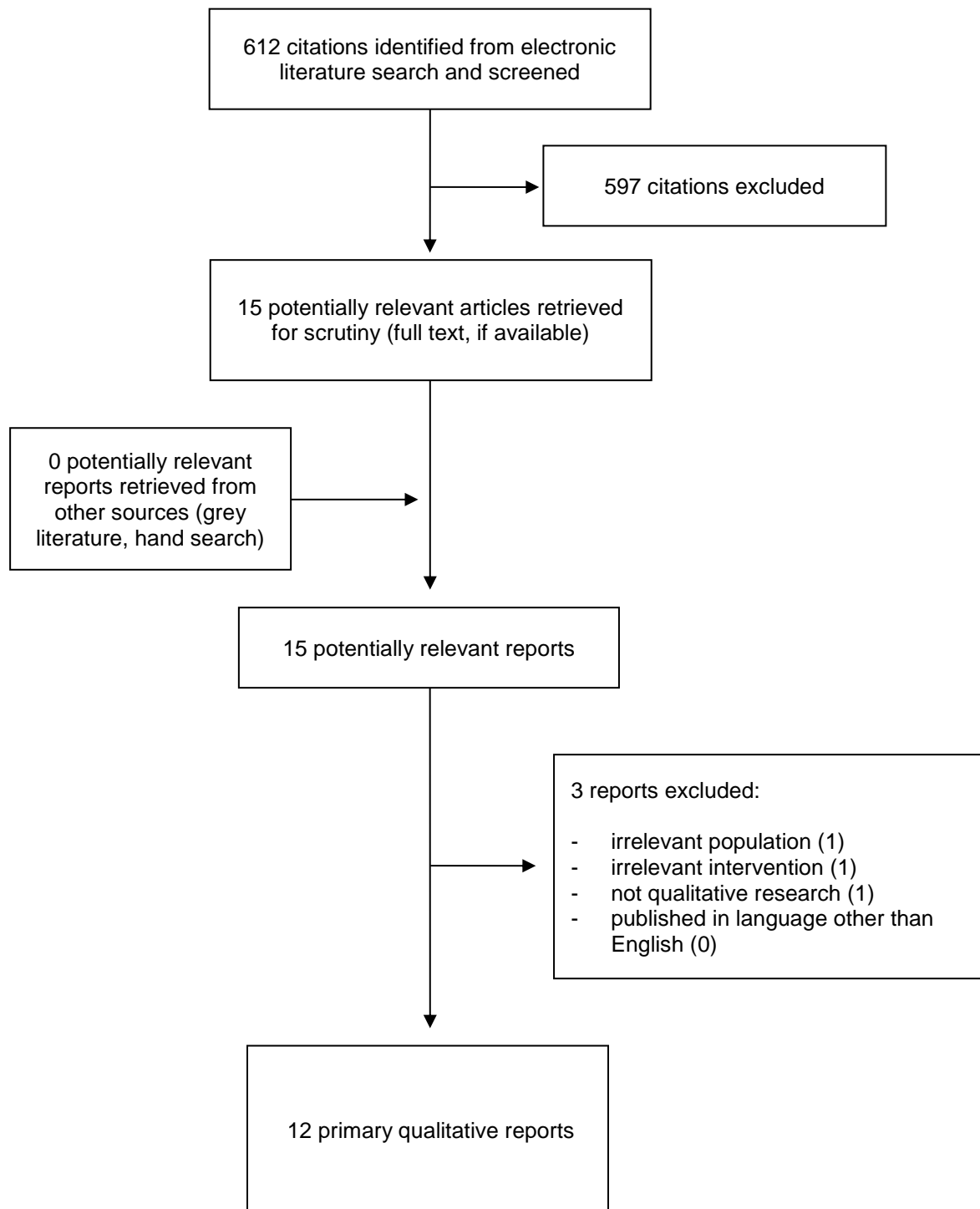
Conversely, extending the diagnostic process may add additional stress for those people awaiting results. Additionally, the absence of the perspectives of those who were tested and did not have skin cancer raises questions about those who would have undergone the diagnostic process and the accompanying emotional turmoil and anxiety only to have a negative result.

The findings of this review point to the importance of clear communication in health care provided to people with suspected skin cancer. Clear communication includes information delivery but also allows for patients' concerns to be address and enables them to navigate their care. As a diagnosis of skin cancer is emotionally fraught, health care communication and interactions afford an opportunity to acknowledge patients' physical and mental health needs. Clear communication about test results and next steps are likely to be appreciated and be received as supporting the emotional and physical needs of people with suspected skin cancer.

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## Appendix 1: Selection of Included Studies



## Appendix 2: Characteristics of Included Studies

**Table 2: Characteristics of Included Studies**

First Author, Publication Year, Country	Study Design	Study Objectives	Sample Size	Inclusion Criteria	Data Collection
Hultstrand Ahlin, 2019, Sweden <sup>7</sup>	NS	To explore patients with melanoma experiences of interactions with health care providers	30 patients	Swedish-speaking patients who were diagnosed with melanoma in past two years and between ages of 18-80	Semi-structured interviews
Pannebakker, 2019, UK <sup>9</sup>	NS	To understand general practitioners and patients' perspectives on the implementation and usefulness of an electronic clinical decision support for melanoma	14 patients 14 general practitioners	General practitioners in a health network that used an electronic clinical decision support for melanoma; patients how had presented with a skin lesion and had the electronic clinical decision support used during their consultation	Semi-structured interviews
Banerjee, 2018, USA <sup>10</sup>	NS	To present the ways that melanoma survivors narrate their cancer experience on-line, to identify survivors' motivations for sharing, and to better understand the ways in which survivors are impacted by and cope with the diagnosis and treatment of cancer	95 unique melanoma survivor narratives	All patient narratives of survivors available in November 2015 in the Melanoma Research Foundation library	On-line patient accounts from the melanoma Research Foundation's on-line library of survivor narratives
Lamprell, 2018, Australia <sup>13</sup>	Meta-narrative	To investigate patients' perspectives on met and unmet needs for supportive care and to conceptualize a patient view of the care trajectory for melanoma	214 personal accounts	Personal accounts of melanoma written in English and publicly available on websites of cancer and melanoma support organizations	On-line personal accounts from 17 websites from four countries

First Author, Publication Year, Country	Study Design	Study Objectives	Sample Size	Inclusion Criteria	Data Collection
				available prior for November 2016	
Vogel, 2018, USA <sup>11</sup>	NS	To identify a relevant and inclusive list of quality of life issues among long-term survivors of melanoma	33 patients	English-speaking patients who were aged 18–65 years when diagnosed with cutaneous melanoma	Focus groups composed by gender and cancer stage (early vs. advanced)
Bird, 2015, UK <sup>14</sup>	Grounded theory	To explore patients' experiences of having melanoma and their support needs and processes that met those needs	11 patients	English-speaking patients 18 years and older who had a diagnosis of melanoma and surgical treatment, had no evidence of metastatic disease at the time, and were attending clinics for regular surveillance	In-depth interviews
Stamataki, 2015, UK <sup>12</sup>	NS	To understand the impact of a melanoma diagnosis the need for supportive care on patients	15 patients	Patient who had been diagnosed with invasive skin melanoma and with metastases confined to the lymph nodes, and who were diagnosed at least 3 months and no more than 5 years prior	Semi-structured interviews
Comfere, 2015 and Wong, 2015, USA <sup>15,16</sup>	Explanatory sequential, mixed-methods study	To understand dermatopathologists opinions about the process of skin biopsy requisition	153 dermatopathologists provided free-text comments  NS number of dermatopathologists participated in focus groups	Members of the American Society of Dermatopathology	Focus groups
Hajdarevic, 2014, Sweden <sup>8</sup>	NS	To explore patients' existential experiences of being diagnosed with melanoma	30 patients	Swedish-speaking patients who were diagnosed with melanoma in past two years and	Semi-structured interviews

First Author, Publication Year, Country	Study Design	Study Objectives	Sample Size	Inclusion Criteria	Data Collection
				between ages of 18-80	
Bath-Hextall, 2013, UK <sup>17</sup>	Mixed methods (NS)	To follow the experiences and knowledge of patients with non-melanoma skin cancer from diagnosis to one year afterwards	15 patients	Patients attending a skin cancer clinic with a new diagnosis of non-melanoma skin cancer	In-depth interviews
Rychetnich, 2013, Australia <sup>18</sup>	NS	To describe melanoma clinicians' perspectives on patient follow-up, factors that influence follow-up intervals, and important considerations for extending intervals	16 health care providers	General practitioners, surgical oncologists and dermatologists at two melanoma specialist clinics	Semi-structured interviews

NS = not stated



## Appendix 3: Characteristics of Study Participants

**Table 3: Characteristics of Study Participants**

First Author, Publication Year, Country	Sample Size	Sex (% female)	Age Range in Years	Type of skin cancer; stage
Hultstrand Ahlin, 2019, Sweden <sup>7,8</sup>	30 patients	50%	29-79	Diagnosed with melanoma in past two years; NS
Pannebakker, 2019, UK <sup>9</sup>	14 patients 14 general practitioners	79% patients 64% general practitioners	36-80 years patients 27-60 years general practitioners	43% referred to a specialist to investigate suspected melanoma symptoms further, 57% told no further action required; NA
Banerjee, 2018, USA <sup>10</sup>	95 patients	66.3%	mean 35.4 (SD14)	91.6% had unspecified melanoma; 25.3% had early stage and 44% had completed treatment with no evidence of disease
Lamprell, 2018, Australia <sup>13</sup>	214 personal accounts	NS	NS	Melanoma; NS
Vogel, 2017, USA <sup>11</sup>	33 patients	54.5%	18-65	Cutaneous melanoma; 63.3% had early stage
Bird, 2015, UK <sup>14</sup>	11 patients	54.5%	31-83	Melanoma (not specified); 73% were stage II at diagnosis
Stamataki, 2015, UK <sup>12</sup>	15 patients	53%	27-78	Cutaneous melanoma; 47% were stage II or lower
Comfere, 2015 and Wong, 2015, USA <sup>15</sup> <sup>16</sup>	153 dermatopathologists (who provided free-text comments in survey) NS dermatopathologists who participated in focus groups	36% NS	mean 52 (SD 12) NS	NA; NA NA; NA
Bath-Hextall, 2013, UK <sup>17</sup>	15 patients	47%	35-89	Non-melanoma skin cancer; NS
Rychetnich, 2013, Australia <sup>18</sup>	16 clinicians	25%	NS	NA; NA

NS = not stated; SD = standard deviation; NA = not applicable

## Appendix 4: Critical Appraisal of Included Publications

**Table 4: Critical Appraisal of Included Publications Using CASP Qualitative Checklist<sup>4</sup>**

First Author, Year	Clear statement of the aims of the research?	Qualitative methodology appropriate?	Research design appropriate to address the aims of the research?	Recruitment strategy appropriate to the aims of the research?	Data collected in a way that addressed the research issue?	Relationship between researcher and participants been adequately considered?	Ethical issues been taken into consideration?	Data analysis sufficiently rigorous?	Clear statement of findings?	Relevant to the current review?
Hultstrand Ahlin, 2019 <sup>7</sup>	+	+	+	+	+	+	+	+	+	+
Pannebakker, 2019 <sup>9</sup>	+	+	-	+	+	-	+	-	-	-
Banerjee, 2018 <sup>10</sup>	+	+	+	+	+	+	-	-	+	+
Lamprell, 2018 <sup>13</sup>	+	+	+	+	+	+	+	+	+	+
Vogel, 2017 <sup>11</sup>	+	+	+	+	+	+	+	+	+	-
Bird, 2015 <sup>14</sup>	+	+	+	+	+	+	+	+	+	-
Comfere, 2015 <sup>16</sup>	+	+	-	+	-	+	+	-	-	-
Stamataki, 2015 <sup>12</sup>	+	+	+	+	+	+	+	+	+	-
Wong, 2015 <sup>15</sup>	+	+	-	+	-	+	+	-	-	-
Hajarevic, 2014 <sup>8</sup>	+	+	+	+	+	+	+	+	+	-
Bath-Hextall, 2013 <sup>17</sup>	+	+	-	+	-	+	+	-	+	+
Rychetnich, 2013 <sup>18</sup>	+	+	+	+	+	-	+	-	+	-

+ = yes; - = no