Patient reported factors influencing the decision-making process of men with localised prostate cancer when considering Active Surveillance—A systematic review and thematic synthesis

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Abstract

Objectives: Outcomes for men with localised prostate cancer managed with Active Surveillance (AS) are similar to outcomes for men who have received Active Treatment. This review explore men’s perceptions of the factors that influence their decision-making process when considering AS.

Method: A systematic review of studies was conducted up to May 2021, including qualitative studies which explored the decision making of men with localised prostate cancer when considering AS. Evidence was analysed using thematic synthesis.

Results: Thirteen papers, including 426 men, met inclusion criteria and were analysed in the review. Approximately half of the men had chosen AS and half had chosen Active Treatment. The choice of AS was not a one-off decision but rather an ongoing behaviour. Four themes were identified and considered within a temporal model: pre-diagnosis representations of cancer and treatment; experience of testing and diagnosis; patient decision making; and emotional adjustment to AS. Key barriers and facilitators to men choosing AS were identified. In deciding whether or not to choose AS, men balanced a desire for quality of life against fear of cancer progression.

Conclusions: Both cognitive representations and emotional arousal influence how men decided whether or not to opt for AS. Interventions tailored to elicit and address emotional appraisals of risk, and increase trust in AS protocols, may be of value in helping men to make decisions around treatment for localised prostate cancer.

Keywords

Active Surveillance, cancer, decision making, prostatic neoplasms, psycho-oncology, qualitative research, systematic review, thematic synthesis watchful waiting
1 | INTRODUCTION

Prostate cancer is the second most common cancer diagnosed in men with approximately 1.1 million new cases diagnosed worldwide in 2012. The cumulative lifetime risk of a diagnosis of prostate cancer for men in more developed countries is 12.3%, and in less developed countries is 4.4%. Differences in lifetime risk between countries represent differences in the age of the population, and use of prostate specific antigen (PSA)-based screening for prostate cancer. There was a rise in diagnoses of prostate cancer in the United States and Europe from the mid-1980s due to PSA testing. However in 2012 the US Preventive Services Task Force issued guidelines recommending against PSA-based screening for prostate cancer for men of all ages due to false positives, overdiagnosis of prostate cancer, and overtreatment.

This recommendation led to an increased awareness of overtreatment of prostate cancer and resulted in an increase in Active Surveillance (AS). Analysis of cancer registry data in the US indicates that AS rates for localised prostate cancer have increased between 2010 and 2014 from 30.2% to 57.5%, however there are differences in rates of AS due to geography, age, marital status and insurance status. Being older, unmarried and uninsured were all independent predictors of choosing AS. The European Association of Urology (2021) guidelines state that over-treatment is the main risk for men with low-risk prostate cancer, and recommend that AS should be considered for all low-risk patients.

Both individual and physician factors have been found to influence the decision to choose AS for prostate cancer. Kinsella et al. (2018) conducted a mixed methods review of patient factors influencing choice of AS and found that patient and tumour factors, family and social support, provider attitudes, type of healthcare organisation and health policy all influenced choice. However, the Kinsella review only included qualitative studies with more than 20 participants, and conducted a content analysis of the qualitative studies, identifying barriers and facilitators to choosing AS. Qualitative evidence synthesis allows for the analysis of complex qualitative data to gain a richer and more detailed understanding of men’s experiences, attitudes and priorities for decision making about their prostate cancer treatment. This systematic review will therefore use thematic synthesis to explore men’s perspectives on the factors that influence their decision-making process when considering AS.

2 | METHODS

This review was prospectively registered with PROSPERO (CRD42020197686) and reported according to the PRISMA checklist and ENTREQ statement (Table S1, Table S2).

2.1 | Research question

What factors influence the decision-making process of men with localised prostate cancer when considering AS?

2.2 | Search strategy

Comprehensive pre-planned searches of published qualitative literature were conducted in July 2020, using EBSCO CINAHL, Medline—Pubmed, Embase, Psychinfo and SCOPUS. Searches were updated in May 2021. Papers to be included in the review were identified using the sample, phenomenon of interest, design, evaluation, research type (SPIDER) tool. Papers were included if they reported qualitative data about men’s decision-making process around considering (choosing or not choosing) AS for treatment of localised prostate cancer. Papers were excluded if they reported single case studies, quantitative and mixed methods studies unless the qualitative data could be separated from the quantitative data, studies not published in English, full text not available, or studies which focused on partners’, couples’, or health care professionals’ decision-making.

| No. | Query | SPIDER |
|-----|-------|--------|
| #7  | #1 AND #2 AND #3 AND #4 AND #5 AND #6 |        |
| #6  | ‘Qualitative research’ OR ‘qualitative analysis’ OR ‘qualitative methods’ OR ‘thematic analysis’ | Research type |
| #5  | ‘Experience’ OR ‘attitude’ OR ‘perception’ OR ‘belief’ OR ‘factor’ OR ‘choice’ OR ‘view’ OR ‘decision making’ OR ‘treatment choice’ OR ‘representation’ OR ‘preference’ OR ‘perspective’ OR ‘influence’ | Evaluation |
| #4  | ‘Interview’ OR ‘focus group’ OR ‘interviews as topic’ OR ‘focus group’ OR ‘semi structured interview’ | Design |
| #3  | ‘Active Surveillance’ OR ‘watchful waiting’ OR ‘observation’ | Phenomenon of interest |
| #2  | ‘Local’ OR ‘low risk’ OR ‘early stage’ OR ‘stage one’ | Sample |
| #1  | ‘Prostate cancer’/exp OR ‘prostate cancer’ OR ‘prostatic cancer’/exp OR ‘prostatic cancer’ OR ‘prostatic tumour’ OR ‘prostatic neoplasm’/exp OR ‘prostatic neoplasm’ | Sample |

Abbreviation: SPIDER, sample, phenomenon of interest, design, evaluation, research.
processes unless the patients’ decision-making process could be clearly identified. No limits were put on publication date, therefore studies were included that were published from inception to May 2021. Search terms used in one of the databases (Embase) are detailed in Table 1 and were linked using Boolean operators, with truncations and wild cards where appropriate. Additional papers were identified by hand searching the reference lists of included studies.

### 2.3 Data screening

The search results were stored in Microsoft Excel. Duplicates were removed from the list of papers, and the remaining abstracts were screened by one author (Maggie Cunningham) to eliminate any studies which did not meet the inclusion criteria. Full texts were obtained for the remaining abstracts. One author assessed each full paper against the inclusion criteria. The papers which did not meet the inclusion criteria were screened by a second author (Mike Murphy) before being excluded. There were no disagreements about the decisions to exclude full text papers.

### 2.4 Data extraction

One reviewer (Maggie Cunningham) systematically extracted the study characteristics data into Microsoft Excel, including authors, year of publication, country of research; study design, sampling, data collection and analysis; participants, age; phenomenon of interest; setting; social, geographical and ethnic context; and key findings. Entire results sections, comprising quotations and interpretation of included papers were extracted into QSR NVIVO version 12.

### 2.5 Quality appraisal

Two review authors (Maggie Cunningham and Mike Murphy) independently assessed the methodological and reporting quality of included studies using the critical appraisal skills programme qualitative checklist.\(^{15}\) Consensus was reached on the quality of included studies through discussion. No studies were excluded on the basis of the quality appraisal.

### 2.6 Data synthesis

Data was analysed using thematic synthesis.\(^{14}\)

In the first stage of the synthesis, all first and second order data from the Results sections of included studies was coded line by line according to its meaning and content, to search for concepts. Coding was completed in QSR NVIVO version 12. The papers were coded in alphabetical order, and the codes from the first paper were translated into the second paper and so on until all papers had been coded. Coding was therefore an evolving, inductive and iterative process, and as new codes were generated previous papers were re-visited to ensure that all instances of that code had been captured. Coding was carried out by one reviewer (Maggie Cunningham), and checked by a second reviewer (Mike Murphy).

In the second stage of the synthesis, descriptive themes were developed by grouping the list of codes by meaning. The descriptive themes were developed from the full list of codes by the research team, through discussion in a team mapping exercise. The team involved in the mapping exercise was multidisciplinary and consisted of a research psychologist (Mike Murphy), a clinical psychologist (Helen L. Richards), a health psychologist (Maggie Cunningham) and a consultant urologist (Paul Sweeney).

Analytical themes were generated in the third stage of the thematic synthesis. Third order interpretations of the data were developed by the research team, through consideration of how the descriptive themes answered the research question what factors influence decision making when considering AS, and consideration of the implication of these factors for intervention development.

### 3 RESULTS

#### 3.1 Study selection

A total of 79 unique papers were identified. After screening of abstracts, 31 papers remained and the full texts of these papers were assessed for eligibility against the inclusion criteria. Eighteen further papers were excluded after full-text screen; reasons for exclusion were that the studies were not about decision making, no qualitative results were provided, relevant data could not be separated from other data, or the same data was included in multiple papers. The PRISMA flow diagram for the number of papers included and excluded at each stage is shown in Figure 1.\(^{10}\) Study characteristics of included studies are presented in Table 2.

#### 3.2 Study quality

There was some variation in the comprehensiveness of reporting of included studies. Only one study provided information on all of the CASP checklist items.\(^{16}\) The CASP checklist item which was most poorly reported was ‘has the relationship between researcher and participants been adequately considered?’ In general, no or little information was provided about the relationship between the researchers and participants or the impact of the researchers on question formulation, conduct of the interviews or the analysis. CASP item ‘was the data analysis sufficiently rigorous?’ was also poorly reported in five papers. In those papers analysis was only briefly described, and it was not clear how themes were derived from the
data. Details of the CASP quality appraisal for each included study are provided in Table 3. No studies were excluded on the basis of the quality assessment.

### 3.3 Participant characteristics

Data from 426 men were included in the review. Participants’ ages ranged from 43 to 85 years. Of the men included in the review, 200 were currently on AS; 36 had been on AS and had then chosen to switch to Active Treatment; 184 had chosen Active Treatment at diagnosis; and six were unknown or undecided about their treatment choice. The majority of studies had taken place in the USA (n = 7), two studies were set in the UK, two in Canada, one in Australia and one in Italy. Nine studies had used thematic analysis, two had used content analysis and two had used grounded theory. Eleven studies gathered data through semi-structured interviews, and two by focus group. Generally, papers gave very few details about the social, geographical or ethnic background of participants. Where details of ethnicity were provided, most studies had a majority of white participants, however, two studies conducted in the USA had a majority of black participants.22,27

### 3.4 Themes

In developing the analytical themes, the research team considered the research question, *what factors influence decision-making when considering AS*, and the implication of these factors for intervention development. The papers included in the review had explored men’s perspectives on decision making, which may well differ from health professionals’ perspectives. Opting for AS was not perceived by men to be a single decision, but rather a decision which is made on an ongoing basis over time, in contrast with opting for Active Treatment which is seen as a final decision. Because of this, we structured the analytical themes within a temporal model (see Figure 2). The temporal model captures factors which influence decision making; it is cyclical, as men revisit the decision to remain on AS over time. Four overarching themes were identified within the temporal model: (a) pre-diagnosis representations of cancer and treatment; (b)
| Study, date, country | Study design, sampling, data collection and analysis | Participants, age | Phenomenon of interest | Setting | Social, geographical, ethnic context | Key outcomes, findings, authors conclusion |
|---------------------|---------------------------------------------------|-------------------|-----------------------|---------|-------------------------------------|------------------------------------------|
| Bellardita et al., 2012, Italy | Study design: qualitative, semi-structured individual face-to-face interview. Sampling: Patients enrolled in the prostate cancer research international: AS protocol (PRIAS). Analysis: content analysis. | Participants: $n = 46$; age: mean 63 years (range 43-77); time since diagnosis: not documented; type of treatment: AS | Factors influencing the choice of AS and the decision-making process that patients undergo when facing the opportunity to choose among different options including AS | Not documented | 92% had a partner. Four elementary thematic clusters identified: 1. The start - patients’ ambivalence regarding therapeutic options, most recurrent words were ‘remove’ and ‘but’. 2. The crossroad - patient’s assessment of the situation, most significant words were ‘to choose’ and ‘aggressive’. 3. The map - information gathering, characterised by ‘to decide’ and ‘data’. 4. Encounters - patients’ collection of informal data, significant words included ‘to talk’ and ‘friend’. |
| Berger et al., 2014, USA | Study design: mixed methods (database analysis and qualitative semi-structured interviews); Sampling: Men who left the prostate cancer AS program in the last 3 years. Analysis: modified grounded theory. | Participants: $n = 21$; type of treatment: Fourteen men who elected to leave AS program of their own accord; 7 men who left following a physician’s recommendations. No patient characteristics documented. | Factors that influence patients’ decisions to leave an AS program. | Not documented | Not documented for qualitative sample | Main themes: 1. Reasons for participating ‘you’ve got a 25 years outlook before it’s going to kill you’; 2. Follow-up in AS ‘getting the oil changed’; 3. Reasons for seeking treatment ‘a time to do it’; 4. Fear of cancer ‘the word ‘cancer’ scares me’; 5. Loved ones’ worry and experiences ‘being there for the kids’. In the sample of men who self-elected to leave, factors influencing decision included - uncertainty involved in AS participation, personal circumstances and fear of cancer. |
| Chapple et al., 2002, UK | Study design: qualitative, semi-structured individual face-to-face interview. Sampling: purposive to include men at different stages of diagnosis, some recently diagnosed and others who had been diagnosed years previously, with experience of a wide range of treatments. | Participants: $n = 50$; age: 50–60, $n = 10$; 61–70, $n = 19$; 71–85, $n = 21$; type of treatment: Watchful waiting, $n = 4$; active treatment, $n = 46$. | To understand what leads men to choose ‘watchful waiting’ rather than active treatment for cancer of the prostate. | Patient home White British: 46 (92%); ethnic minority groups: 4 (8%) | Watchful waiting clinically inappropriate for approximately 50% of sample. Few of the men who might have chosen watchful waiting remembered this being presented as a serious option. Regardless of choice made, men described considerable pressure from family... |
| Study, date, country | Study design, sampling, data collection and analysis | Participants, age | Phenomenon of interest | Setting | Social, geographical, ethnic context | Key outcomes, findings, authors conclusion |
|---------------------|---------------------------------------------------|------------------|------------------------|---------|--------------------------------------|---------------------------------------------|
| Davison et al., 2009, Canada | Study design: qualitative, semi-structured individual face-to-face interview. Sampling: purposive sampling of patients diagnosed with low-risk prostate cancer and on AS, from hospital prostate clinics. Analysis: thematic analysis. | Participants: n = 25; age: mean 66 years (range 48–77); time since diagnosis: Approximately half of the men were within one year of diagnosis; type of treatment: AS | Factors that influenced men's decisions to take up AS | Private patient library | Caucasian: 23 (92%); South Asian: 2 (8%); Married or cohabiting: 19 (76%) | Specialists' description of prostate cancer influential in choosing AS. Patients relieved no treatment required. AS chosen to delay treatment and avoid treatment related side effects. No major distress due to being on AS. |
| Fitch et al., 2017, Canada | Study design: qualitative, focus groups and some individual face-to-face interviews. Sampling: convenience sample of men eligible for AS. Analysis: content and thematic analysis. | Participants: n = 52; age: mean 68 years (range 53–81); time since diagnosis: 1 to 16 years; type of treatment: AS, n = 38 (73%); withdrew from AS, n = 1 (2%); chose active treatment at diagnosis, n = 9 (17%); unknown, n = 4 (8%) | The perspectives of men with prostate cancer regarding their decision-making process for AS | Not documented | Not documented | Themes: 1. An important decision is needed at a time of emotional upset and uncertainty; 2. Information is necessary on a number of topics before a decision can be made about AS; 3. Disease status and quality of life are important factors for men in deciding about AS; 4. Conversations with doctor(s) have significant influences on men in their decision making about AS. |
| Holmboe and Concato, 2000, USA | Study design: qualitative, semi-structured individual face-to-face interview. Sampling: Cohort of men newly diagnosed with localised prostate cancer who had not yet received treatment. Analysis: content analysis. | Participants: n = 102; age: mean 66 years; type of treatment chosen: watchful waiting, n = 12 (12%); active treatment, n = 90 (88%). | To identify what factors men consider important when choosing treatment for prostate cancer, and to assess why men reject watchful waiting as an option | Clinic facility/patient home | White: 8% | Taxonomy of reasons for treatment choice: 1. External information, physician recommendation, evidence/track record, likelihood of side effects; 2. Intrinsic characteristics of treatment; 3. Patient-centred factors; 4. Economic concerns |
| Lyons et al., 2017, USA | Study design: qualitative semi-structured interviews, face-to-face or by telephone. Sampling: convenience, men diagnosed with prostate cancer for whom AS or active | Participants: 19 patients; age: mean 65 years; type of treatment: AS, n = 13 (68%); active treatment, n = 4 (21%); undecided, n = 2 (11%) | What do men think and feel about AS as an option to manage their low-risk prostate cancer | Not documented | White, non Hispanic: 100% | Three themes: 1. AS as a temporary strategy; 2. AS as informed inaction; 3. Malleability of representations of AS. |

(Continues)
| Study, date, country | Study design, sampling, data collection and analysis | Participants, age | Phenomenon of interest | Setting | Social, geographical, ethnic context | Key outcomes, findings, authors conclusion |
|----------------------|-------------------------------------------------|-------------------|-----------------------|---------|--------------------------------------|-------------------------------------------------|
| Mallapareddi et al., 2017, USA | Study design: qualitative semi-structured focus groups, three with patients and two with partners. Sampling: Convenience sample of men who had been on AS for at least 6 months. Analysis: thematic analysis | Participants: 12 men (data from focus groups with six partners not included in review); age: median 61 years (range 47 to 71); median time since diagnosis: 18 months. Type of treatment: AS, n = 12 (100%) | To better understand conceptualisations, experiences and reasons why men with low-risk localised prostate cancer and their partners adopt AS | Not documented | Black: 7 (58%); White: 5 (42%) | Themes: 1. Terms used to describe AS; 2. Influencing factors to pursue AS - seeing their cancer as 'small' and 'low-grade', trust in their physician; 3. Concerns about PSA testing and prostate biopsies; 4. When to end AS; 5. Medical mistrust from black men's focus group; 6. Sharing cancer diagnosis and justifying decision to others. |
| O'Callaghan et al., 2014, Australia | Study design: Qualitative individual semi-structured telephone interviews. Sampling: Purposive, according to varied age, treatment choice, time on AS, reason for ceasing AS, socio-demographic background and rural/urban swelling. Analysis: Grounded theory | Participants: 21 men (data from 14 partners not included in review as partner data could be separated from men's results); age: <60, n = 7; 61-70, n = 11; >70, n = 3; type of treatment: Still on AS, n = 11 (52%); active treatment after period on AS, n = 9 (43%); active treatment immediately after diagnosis, n = 1 (5%) | Men's experience of treatment decision making following localised prostate cancer diagnosis and their experience of AS when AS was the recommended treatment option | Telephone interviews | Australian: 15 (71%); others: 6 (29%) | Themes and subthemes: 1. Localised prostate cancer treatment decisions are affected by information gathered and varied emotional and relational reactions; -information was satisfactory, contradictory, stressful and/or misunderstood; -decision making: Difficulties, assistance and rationales; 2. Men and partners both experience and often cope with AS; - pre-existing strengths, informal supports, and maintaining 'normal' life assist coping with AS; - cancer monitoring and confidence in health professionals assist coping with AS; 3. AS stressors are endured or inform radical treatment decision; - AS stressors encompass illness uncertainty, monitoring |
| Study, date, country | Study design, sampling, data collection and analysis | Participants, age | Phenomenon of interest | Setting | Social, geographical, ethnic context | Key outcomes, findings, authors conclusion |
|---------------------|------------------------------------------------------|-------------------|-----------------------|---------|-------------------------------------|------------------------------------------------|
| Parker and Flynn, 2016, UK | Study design: qualitative individual semi-structured face-to-face interviews. Sampling: convenience, men on the AS pathway. Analysis: thematic coding system | Participants: 6 men; age range: 59 to 74 years; time on AS: between 6 months and 3 years; type of treatment: AS, n = 6 (100%) | To explore the usefulness of written information in men’s decision making about treatment options for low-risk prostate cancer | Not documented | Not documented | The findings suggest that men find the clinical consultation more useful than written information or, internet or support groups when making decisions about treatment. |
| Seaman et al., 2019, USA | Study design: qualitative, semi-structured interviews, face-to-face or by phone. Sampling: convenience sample of men with low-risk prostate cancer who had been on AS for at least one year, recruited from hospital clinics. Analysis: thematic analysis | Participants: 21 men; age: mean 70 years (range 56 to 84); type of treatment: Still on AS, n = 16 (76%); active treatment, n = 5 (24%). | Clinical and psychological factors associated with selecting and adhering to AS protocols | By phone or in the clinic | White: 18 (86%); Black 2 (10%); other 1 (5%) | Themes and subthemes: 1. Decision factors for selecting AS; - presentation of AS; - trust in urologist; - confidence in AS; uncertainty tolerance; 2. AS protocols; - biopsy schedule; - use of MRI; 3. Experiences of AS; - importance of quality of life; - treatment inevitability; - confidence in protocol and urologist; - active engagement; - routine nature of AS; - social support; 4. Intentions for continuing AS and considerations for switching to active treatment; - intentions for AS; - tumour progression; - age; - treatment advances; - potential for regret |
| Volk et al., 2014, USA | Study design: qualitative semi-structured telephone interviews. Sampling: Purposive in 2 groups - men who had chosen AS and were 6-18 months from decision to enter AS protocol, and men who chose to receive active treatment. Analysis: thematic analysis | Participants: 30 men; age: AS group mean 63 years (range 49 to 72), active treatment group mean 59 years (range 45 to 70 years); type of treatment: AS, n = 15 (50%); active treatment, n = 15 (50%) | Explore patients’ conceptualisations of AS and treatment decision making. | Telephone interviews | White: 28 (93%); other 2 (7%) | Themes: 1. AS is an organised, supportive process; 2. AS prolongs current good health; 3. Viewing their cancer as low risk and having time to decide about treatment; 4. Avoidance of side effects of treatment; 5. Importance of physician recommendation about AS; 6. Justifying the decision to others; 7. Desire for immediate cure. |
experience of testing and diagnosis; (c) patient decision making; (d) emotional adjustment to AS. Quotations are provided throughout to illustrate the themes. [P] denotes a participant comment and [A] denotes an author comment.

3.5 | Pre-diagnosis representations of cancer and treatment

The first theme in the temporal model related to men’s beliefs about cancer and cancer treatment prior to being diagnosed with prostate cancer. These beliefs were influenced by society’s narratives about cancer and also their own friends’ and families’ experiences of cancer and cancer treatment. Some men had not heard of prostate cancer or AS prior to diagnosis with prostate cancer.

It’s amazing that you don’t really know about prostate cancer until you are diagnosed; like, why would I want to know about it? I really didn’t know anything about prostate cancer or even what the prostate was… [P]19

I had not heard about Active Surveillance before at all… when I first got cancer [P]19

Men’s views about cancer and AS were shaped by the cancer experiences of their acquaintances, not necessarily other men with prostate cancer. This was particularly the case if they had experience of cancer related deaths among their acquaintances.

Well, I guess the word ‘cancer’ scares me. I had a good friend who died with prostate cancer, and he was fairly young. [P]16

From my personal experience, the people I personally know, all the people who had surgery are alive, all the people that either waited too long or didn’t have surgery are dead. So I figured that was pretty good thing to go by. [P]21

Several studies mentioned that there is a narrative in society that cancer should be detected early and treated; men were aware of this and felt that the concept of AS went against this expectation. Therefore, both men and their families had to overcome this expectation before being open to considering AS as a choice for managing prostate cancer.

And of course that is the whole atmosphere, the whole climate is telling you, find these things early, and then you can deal with them, and they won’t trouble you any more. [P]17

Active Surveillance men recognized that their decision was counter to expected norms for people with cancer,
|                   | Bellardita et al. | Berger et al. | Chapple et al. | Davison et al. | Fitch et al. | Holmboe et al. | Lyons et al. | Mallapareddi et al. | O’Callaghan et al | Parker et al. | Seaman et al. | Volk et al. | Xu et al. |
|-------------------|-------------------|---------------|----------------|----------------|--------------|----------------|---------------|---------------------|------------------|--------------|--------------|------------|----------|
| Was there a clear statement of the aims of the research? | YES               | YES           | YES            | YES            | YES          | YES            | YES           | YES                 | YES              | YES          | YES          | YES        | YES      |
| Is a qualitative methodology appropriate?             | YES               | YES           | YES            | YES            | YES          | YES            | YES           | YES                 | YES              | YES          | YES          | YES        | YES      |
| Was the research design appropriate to the aims of the research? | YES               | YES           | YES            | YES            | YES          | YES            | YES           | YES                 | YES              | YES          | YES          | YES        | YES      |
| Was the recruitment strategy appropriate to the aims of the research? | Can’t tell         | YES           | YES            | Can’t tell     | YES          | YES            | YES           | YES                 | Can’t tell        | YES          | YES          | Can’t tell  | Can’t tell|
| Were the data collected in a way that addressed the research issue? | YES               | YES           | YES            | YES            | YES          | YES            | YES           | YES                 | Can’t tell        | YES          | YES          | Can’t tell  | Can’t tell|
| Has the relationship between researcher and participants been adequately considered? | NO                | YES           | Can’t tell     | Can’t tell     | Can’t tell   | Can’t tell     | Can’t tell     | Can’t tell           | Can’t tell        | Can’t tell   | Can’t tell   | Can’t tell  | Can’t tell|
| Have ethical issues been taken into consideration?       | YES               | YES           | YES            | YES            | NO           | YES            | YES           | YES                 | YES              | YES          | YES          | CAN’T TEL  | CAN’T TELL|
| Was the data analysis sufficiently rigorous?             | Can’t tell         | YES           | Can’t tell     | YES            | Can’t tell   | YES            | YES           | YES                 | Can’t tell        | YES          | YES          | CAN’T TELL  | CAN’T TELL|
| Is there a clear statement of findings?                  | YES               | YES           | YES            | YES            | YES          | YES            | YES           | YES                 | YES              | YES          | YES          | YES        | YES      |
| How valuable is the research?                           | Valuable           | Valuable      | Valuable       | Valuable       | Valuable     | Valuable       | Valuable       | Valuable             | Valuable          | Valuable     | Valuable     | Valuable   | Valuable |
| Total CASP score                                       | 7                 | 10            | 8              | 9              | 8            | 7              | 9             | 9                   | 9                | 5            | 9            | 9          | 5        |
and at times, they felt the need to justify their decision to other people. [A]²⁶

3.6 Experience of testing and diagnosis

Studies highlighted a number of factors around testing and diagnosis which influenced the decisions men made about AS. This included the role the patient and doctor had in the decision-making process, the way information was communicated and the clarity of the information communicated at the time of diagnosis, and how well the patient could tolerate biopsies. Many men were recommended a specific course of action by their urologists—either AS or Active Treatment. Men described giving a lot of weight to their doctor’s recommendation.

Doctor said ‘you could do nothing, but I think you could have a problem later.’... If you watch and do nothing, it [cancer] is going to obviously progress. It’s like, well, you’re waiting for the time bomb to explode. [P]²⁷

I mean, my ‘biggest influence’ of watch and wait was the urologist [P]²²

Some studies noted that men did not recall being presented with AS as an option, or discussing AS with their doctors.

Eighty percent or more discussed radical prostatectomy, brachytherapy, or external beam radiation with a physician; only 59% discussed the watchful waiting approach. [A]²⁰

About half of the men described conversations in which urologists presented information about either treatment options or AS, but not both. [A]²⁵

Several studies described that men were aware that the decision around treatment was their choice and responsibility.

It’s obvious that I am the one choosing. It’s my body that we are talking about, I am the one who decides. [P]¹⁵

Along with the responsibility of making a decision about treatment, some men acknowledged that receiving a diagnosis of cancer was upsetting, frightening and potentially overwhelming.

A number of factors were identified which had an impact on emotional arousal and decision making at this time including men’s expectations about why they were being tested; whether or not they had time in the consultation to process the news of their diagnosis and ask questions; and being given clear and relevant information about their diagnosis and treatment options. Being given inconsistent information, limited options for treatment, being rushed into decision making, or not having the opportunity to ask questions, led to frustration and to dissatisfaction with the decision-making process. The experience of receiving biopsies was also painful and difficult for some men, and some men wondered whether the biopsies themselves could increase the risk of prostate cancer growing or spreading.

Jumping’ PSA levels or memories of inconsistent treatment recommendations on diagnosis were also stressful. [A]²³

A few mentioned wanting to avoid biopsies, preferring the alternative of surveillance MRI tests. [A]²⁵
3.7 Patient decision making

Patient decision making was influenced by five sub-themes: personal risk assessment; the influence of family and friends; beliefs about treatment; doctor and system factors; and information seeking.

**Personal risk assessment:** Men carried out a risk assessment based on their own personal circumstances, beliefs about their cancer, and values and beliefs about themselves, to help them make treatment decisions. They described a balancing act between maintaining their quality of life for as long as possible, and managing the risk of their cancer progressing. Urinary symptoms, elevated PSA or Gleason scores, or evidence of tumour progression were all factors in men choosing Active Treatment. Several studies found that younger age was a factor in choosing Active Treatment, while AS tended to be more acceptable to older men.

When someone is saying, ‘you’ve got a 20- to 25-year outlook before it’s going to kill you,’ and you’re at the time—68, 69- statistically, it made sense. [P]¹⁶

All men mentioned that their age (range, 48–70 years) was influential in their treatment decision. Being ‘young’ was a justification for rejecting WW/AS because ‘WW/AS is only appropriate for older men.’[A]²⁷

How men viewed themselves also had a role in treatment decision making. Some men saw themselves as being proactive and decisive, they viewed AS as inaction and were reassured when they made a decision to take action-influencing their decision in favour of Active Treatment. Other men were comfortable with taking time to make a decision, did not want to commit to a course of action in a rush or take risks with their health when they felt well, and could tolerate uncertainty—influencing their decision in favour of AS.

I was given the option of hormone, or radiotherapy or wait and see. Well, I’m not a wait and see person (...) I feel if you wait and see it can have gone too far [for treatment] to be effective, and therefore whatever has got to be done just get on with it and do it. [P]¹⁷

I think my own personality played a role. I’m very good at ignoring things if I want to. During the period of AS, I didn’t really pay that much attention. [P]²⁵

Men made their risk assessment in favour of AS based on their beliefs about their cancer being small, not aggressive, and slow developing. This led them to consider that their cancer was low risk, and that they therefore had time to choose AS and consider their options.

In the meantime, because everything was fine, it was better to ‘keep it that way’ or ‘why rock the boat?’ [A]¹⁸

My particular diagnosis appeared to be a very small cancer risk... [P]²⁶

**The influence of family and friends:** Family and friends had an influence on whether or not men opted for AS. Several studies noted that pressure from family acted as a barrier to men choosing AS. Emotional arguments from wives and children had an impact on men's decision-making process and sometimes swayed their decision from AS to Active Treatment. Family were perceived as being influenced by fear of cancer spreading, and by society’s cancer narrative of detect and treat, and appeared less concerned by the negative impact of side effects on quality of life.

In the case of younger men, wives were vocal regarding wanting their husbands to have surgery. [A]¹⁸

Patients reported that they pursued treatment and left the Active Surveillance program in order to limit their loved ones’ worry, or in reaction to the fear of cancer expressed by their family. [A]¹⁶

Men accessed their social networks for information on treatment choices for prostate cancer, and were influenced by their friends’ experiences. Men reflected that being able to discuss options with friends and family was an important part of the decision making process.

Several referenced friends with PCa (prostate cancer), often citing the friend’s post-treatment side effects as a factor in their selecting AS. [A]²⁵

They also stated it was important to share the cancer diagnosis and include family and friends in the decision-making process, despite the potential challenges. [A]²²

**Beliefs about Treatment:** Men who chose AS often had strong beliefs about treatment, viewing it as aggressive, and holding concerns about the impact of side effects on quality of life. The decision to opt for AS was often viewed as a temporary one, albeit one that may last for several years. Men had a perception that there was a degree of inevitably to ultimately having Active Treatment, however men who chose AS were keen to hold off the side effects of Active Treatment for as long as possible.

And the possible side effects are pretty severe. You know, you can become incontinent and have sexual difficulties and everything. And I thought, wow, that just seemed like a dramatic overreaction for something that was just, at the very beginning, suggesting there may be an issue. So that was, to me, at the level that I was, it just didn’t make any sense at all to have any extreme treatment. [P]²¹
I will continue until it starts progressing. If it progresses then I’ll do something about it… Yeah, I’m gonna continue until it creates a danger to me. I’m not in any danger right now. [P]^{25}

Some men believed that if they waited for a number of years on AS, then more effective Active Treatment options may be available in the future due to advances in surgical techniques and technology.

I decided because I followed this argument. If it’s not an aggressive thing, an aggressive cancer, it will develop slowly and from a scientific point of view there will be other options apart from surgery [P]^{15}

Men who opted for Active Treatment often viewed AS as doing nothing, or inaction. Men were divided in their beliefs about the effectiveness of treatment, with some men believing that Active Treatment would remove the cancer and provide a cure, while other men believed that treatment may not cure them of the cancer or prolong their life.

I want to get rid of this thing [cancer] right now. [P]^{27}

But if I understand right it’s not that surgery is going to completely eliminate the problem in the long run. That’s what I was told, it could come back. [P]^{15}

**Doctor and system factors:** Both qualities of the health professionals involved in diagnosis and treatment, and protocols within the healthcare system influenced men’s decision making. Men placed a great amount of trust in their doctor’s opinion and relied on them to give them relevant and accurate information about their situation. Trust in healthcare professionals was high when different members of the team gave consistent information or advice; the advice given by the health professionals matched the emotion on their face/in their voice; the healthcare professional or institution had a reputation in the field, either through research or clinical track record; and the healthcare professional was able to answer questions and was interested in men’s concerns and preferences. Having trust in their doctor was identified in most studies as a crucial factor in men choosing AS. Factors which reduced men’s trust in medical professionals included questions over the motivation of their doctor either pursuing treatment for profit or to experiment on patients; and friends’ opinions of doctors’ clinical abilities.

What persuaded me most was the reaction of the medical staff. They didn’t seem to be overly excited about the whole thing. [P]^{19}

I feel like because I was a black man that they were willing to use me as a guinea pig and if they could make some money… [P]^{22}

Men who chose AS relied on robust protocols and procedures within the healthcare system. Trusting in these protocols, for example, having regular appointments for biopsies, blood tests, scans and consultations, allowed them to off-set the risk of continuing to live with cancer inside them. Men were reassured by the protocols for regular monitoring, and needed to believe that the regular checks would quickly pick up any progression in their cancer. Some men lost faith in the reliability of PSA or biopsy results, due to inconsistencies in results or because of information they had read in research or on the internet. This was a source of anxiety for men and a reason why some opted for Active Treatment.

...comfortable with the idea that they were going to watch me closely enough and with enough skill that if this began to be more aggressive or turn into something [else], that they would recognize it and then it would be time to get involved in [Active Treatment]. [P]^{26}

‘PSA is useless… biopsies are just not good for you.’… Why would one test come back and give me a very high Gleason count and then the next biopsy actually says there’s nothing there? [P]^{23}

Several studies described the importance to men of being able to access a range of health professionals when making treatment decisions, for additional information and for second opinions.

**Information seeking:** Men described actively seeking information from a number of sources in order to make a decision about treatment. Sources included health professionals, friends, family, internet, treatment guidelines, information sheets provided by the hospital, books, pamphlets, support groups, and videos. Men highlighted the importance of information to decision making, however they had problems with identifying relevant and reliable information, and found a lot of the information conflicting and confusing and lacking consensus. Men found that synthesising the vast amount of information available was demanding and did not always lead to clarity in decision making.

There is a lot of information out there, but I do not know how accurate it is. I had to sort out what applied to me, to my disease and situation. It was hard to know just from everything I read and had heard. [P]^{19}

They gave me a book to read, and I read it, and they gave me a bunch of stuff that was a little confusing. After I read the whole thing, I didn’t know what the best scenario was… I was still a little puzzled about it, which way to go. [P]^{21}
3.8 | Emotional adjustment to AS

Adjusting to life in AS was an ongoing process for men. Some men described being able to forget, or at least not dwell on the fact that they had cancer. Factors which helped with adjustment to living with cancer included getting on with life and keeping busy, satisfaction with the decision they had made, acceptance that they had cancer but that its progress was being monitored, avoiding thinking about their cancer, rationalising that they may die of something else first, and minimising the risk from their cancer.

You have to learn to live with the fact you have cancer, at least a little bit of it, and that it may never get you. [P]19

At times, not daily, at times, you know, there’s things you kind of have to put on the shelf, and, as they say in the movies, I’ll think about it tomorrow. [P]18

Men recognised the importance of practical and emotional support from family and friends while on AS. Some men, however, chose not to tell anyone other than close family about their prostate cancer because they did not want to be seen differently or for others’ behaviour towards them to change.

I keep everybody involved, because I think if you don’t, you get into a situation where you’re moping. If it’s bugging you, you can talk to somebody about it. Then most likely you can process it and get it out of your system a little quicker. [P]25

I don’t want [prostate cancer] brought up in discussions with friends. I don’t want to be asked, ‘How is your prostate today?’ so I’d rather not discuss it, so I don’t. [P]18

Some men noted increased stress around the time of follow-up checks and surveillance visits. Other sources of anxiety included experiencing symptoms of ill-health and wondering if they were cancer-related, and media coverage of prostate cancer. As time went on, some men decided that they could no longer live with the fear of cancer progression any more, or they became concerned that they should opt for Active Treatment before they became too old or unwell for treatment.

It was 7 years. I figured I was pushing my luck. I figured there was a time to do it, so I did it. [P]16

You watch and wait, but sooner or later, if you’re going to have it done, do you want to wait until you’re 90 before you do it—like my father did—or you want to do it when you’re healthy enough to have it done? [P]16

4 | DISCUSSION

This qualitative thematic synthesis explored men’s perspectives about the factors which influence their decision-making process when considering AS. The decision for whether or not to opt for AS is not a one-off decision, but one that is revisited many times over the years as men attend surveillance appointments. There are factors around diagnosis and testing which influence whether men choose to set off on the path of AS, and there are factors which then influence how long they adhere to AS before opting for Active Treatment. The decision-making process around AS is a balancing act between maintaining quality of life and function for as long as possible versus getting rid of the cancer before it progresses. This balancing act is influenced by both cognitive representations of cancer and treatment, and emotion.

Trust in the doctor, and the doctor’s opinions and advice regarding treatment options were very influential in whether or not men chose AS. Men who were not offered AS as an option by their doctor rarely pursued it as an option. Heuristic processing is thought to reduce effort and increase efficiency in decision making through using common-sense rules of thumb to make decisions based on a subset of available information.28 Heuristic processes include expert opinion heuristics, where decisions are guided by the rule that ‘experts can be trusted’.26 Steginga (2004) found that men with a low tolerance of ambiguity were more likely to use expert opinion heuristics to aid decision making, and that when expert opinion heuristic was used, systematic information processing decreased.28 The findings of this review suggest that men find synthesising information about prostate cancer challenging and therefore unhelpful for decision making. This is in line with previous research which has found that men do not use information comprehensively or systematically when making treatment decisions, and instead rely on their previous lay beliefs about cancer and health.29 These findings highlight the importance of the clinician and tailored information to decision making.

Previous research into decision making of men with localised prostate cancer found that AS enables men to put off making a decision about Active Treatment for the time-being, and this was seen as a major benefit of choosing AS. It allowed men to avoid the negative side effects of Active Treatment for as long as possible. Anticipated regret has been found to influence decision-making processes—higher levels of anticipated regret from engaging in a behaviour predict weaker intentions and behaviour, whereas greater anticipated regret from not engaging in a behaviour predicts stronger intentions and behaviour.20 There is the potential for anticipated regret in each treatment choice—in choosing AS, the anticipated inaction regret may be that the cancer will progress leading to worse outcomes in the long term; in choosing Active Treatment, the anticipated action regret may be the negative side effects of treatment. Of these potential anticipated regrets, the risks from choosing AS are less likely, distal and severe; the risks from choosing Active Treatment are likely, proximal and potentially less severe as they are not life-threatening. Men were influenced in their choice of treatment by
the cancer-related experiences of family and friends, for example men who had experienced cancer-related death of a close acquaintance may have judged the risk of anticipated inaction regret as more likely, proximal and severe, based on this experience. Men with previous negative experiences of cancer, may be influenced by the negative availability heuristic as their personally salient experiences of cancer come easily to their mind; and the affect heuristic, developing strong affective reactions to cancer, cueing a greater estimation of their own risk.28,31

Men who viewed themselves as proactive and decisive, tended to view AS as inaction and were more in favour of Active Treatment. Our findings are commensurate with Chambers’ (2016) exploration of masculinity in prostate cancer and their finding that preference for action is a key aspect of masculine values, suggesting that masculine values and beliefs influence decision making.32

Power, Swartzman and Robinson (2011) propose a framework for understanding patients’ decision making which considers emotions, cognitive representations and the patients’ motivations, and is based on Leventhal’s Common-Sense Model of Self-Regulation (CSM).33,34 The CSM describes how a patients’ cognitive and emotional representations of a health threat determine their coping behaviour to manage both the health threat and accompanying emotional arousal, in order to maintain equilibrium.34 Power et al. (2011) suggest that when making medical decisions, patients’ coping efforts are aimed at addressing both the health threat and the decision situation.33 Thus, the patient must balance the cognitive representation of the health threat, emotional arousal related to the health threat, the cognitive representation of the medical decision and the emotional arousal related to the medical decision. They suggest that making hasty medical decisions may arise out of an attempt by the patient to reduce the emotional discomfort around the existence of the health threat (prostate cancer) and the stress of making a decision (AS vs. Active Treatment).33 This links to our finding that men’s perception of their personality, and their ability to tolerate uncertainty versus the need for reassurance, played a role in decision making. This implies that attempts to reduce emotional arousal at the time of diagnosis and in follow-up surveillance consultations may enable men to systematically explore their options before making a decision. A number of factors were identified in this systematic review which may help reduce stress and arousal in consultations, including expectations being set from the very beginning about the purpose of the diagnostic tests, reducing discomfort around diagnostic tests, having time with the doctor to discuss options and ask questions, being presented with information which is individually tailored, relevant and clear, consensus between health professionals, trustworthiness of AS protocols, and support from family.

4.1 | Study limitations

The papers included in this study were heterogeneous, asking different research questions, using different methods of analysis, and including participants with varied inclusion criteria. In translating findings from one study to another, the specific context of the individual studies can be compromised - a problem inherent to qualitative synthesis. The studies included in this review were mainly conducted in Anglophone countries (USA, UK, Canada, Australia), reducing the generalisability of findings. However, the themes identified in this thematic synthesis were also supported by the study conducted in Italy, providing tentative support for generalisability of the findings to other countries which have AS treatment protocols. Our review identified that the studies included did not tend to distinguish between AS and watchful waiting. We also note that the studies spanned a time period from 2000 to the present day, which may reflect changing attitudes to and protocols for AS.

4.2 | Clinical implications

Doctors’ recommendations for AS are an important factor in decision making. Framing the management of localised prostate cancer as ‘detect and manage’, rather than the more common ‘detect and treat’ perception of cancer treatment; and providing a clear recommendation for AS, may increase men’s willingness to consider AS. Consultations at diagnosis and surveillance visits are times of increased emotional arousal for men, which may increase their likelihood of making hasty treatment decisions to reduce distress. Providing men and their families with relevant, tailored information, listening to their individual concerns, and giving them time to process the information may help to alleviate emotional arousal and allow them to make considered decisions for AS. In particular, men may benefit from separate consultations for diagnosis and decision making, to allow them time to process emotions, gather information and formulate questions. Eliciting information about men’s family and friends’ cancer-related experiences may also help them to identify their assessment of cancer and treatment risk, and would provide an opportunity for the clinician to address their concerns with information specific to their own situation. In particular men may be overestimating the risk of death from prostate cancer which may be influencing their choice of Active Treatment over AS. Eliciting men’s masculine values and motivations in consultations may also help them to make decisions which reduce the likelihood of anticipated regret. Re-framing AS as an active way for men to take control of and manage their own health may help men who perceive themselves as preferring action, to consider AS.

5 | CONCLUSIONS

To our knowledge this is the first thematic synthesis of qualitative studies of factors which influence the decision-making process of men with localised prostate cancer when considering AS. The results indicate that there are a number of factors which influence men’s decision making, including their personal assessment of risk, the influence of family and friends, beliefs about treatment, and doctor and system factors. We considered the decision-making process in a temporal model, which highlighted influences on
decision making at different time points in a man’s cancer journey. The synthesis highlighted the importance of individualised, relevant and clear information to men to support decision making. Several personal factors influence decision making including the cancer-related experiences of friends and families, and the man’s assessment of risk (both from an action and inaction perspective) and consequent judgement of anticipated regret. Clinicians could support men in their decision making by eliciting these personal factors and discussing them in the context of the specifics of their cancer diagnosis. Both trust in doctors and the healthcare system, and family support were highlighted as important aspects of men’s decision-making process, and adjustment to AS.

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CONFLICT OF INTEREST
The authors, Maggie Cunningham, Mike Murphy, Paul Sweeney and Helen L. Richards have no conflict of interest to declare.

AUTHOR CONTRIBUTIONS
Maggie Cunningham conceived of and designed the review, conducted the searches, extracted and analysed the data and drafted the manuscript. Mike Murphy contributed to the design of the review, contributed to paper screening and data interpretation and analysis, and critically revised the manuscript. Helen L. Richards contributed to the conception and design of the review and data interpretation and analysis, and critically revised the manuscript. Paul Sweeney contributed to data interpretation and analysis and critically revised the manuscript. All authors have given final approval for the manuscript to be published, and have agreed to be accountable for all aspects of the work.

DATA AVAILABILITY STATEMENT
Data sharing is not applicable to this article as no new data were created or analysed in this study.

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REFERENCES
1. Ferlay J, Soerjomataram I, Dikshit R, et al. Cancer incidence and mortality worldwide: sources, methods and major patterns in GLOBOCAN 2012. Int J Canc. 2015;136(5):E359-E386.
2. Allemani C, Matsuda T, Di Carlo V, et al. Global surveillance of trends in cancer survival: analysis of individual records for 37,513,025 patients diagnosed with one of 18 cancers during 2000–2014 from 322 population-based registries in 71 countries (CONCORD-3). Lancet. 2018;391(10125):1023-1075.
3. European Association of Urology. EAU-ENM-ESTRO-ESUP-SIOG guidelines on prostate cancer. [cited 27/4/21] Available from https://uroweb.org/wp-content/uploads/EAU-ENM-ESTRO-ESUP-SIOG-Guidelines-on-Prostate-Cancer-2021V3.pdf
4. Barsouk A, Padala SA, Vakitii A, et al. Epidemiology, staging and management of prostate cancer. Med Sci (Basel). 2020;8(3):28.
5. Moyer VA. U.S. Preventive Services Task Force. Screening for prostate cancer: U.S. Preventive Services Task Force recommendation statement. Ann Intern Med. 2012;157(2):120-134.
6. Dall’Era MA, Klotz L. Active Surveillance for intermediate risk prostate cancer. Prostate Cancer Prostatic Dis. 2017;20(1):1-6.
7. Bandini M, Nazzani S, Marchioni M, et al. Increasing rate of noninterventional treatment management in localized prostate cancer candidates for active surveillance: a North American population-based study. Clin Genitourin Canc. 2019;17(1):72-78.
8. Richard PO, Alibhai SMH, Panzarella T, et al. The uptake of Active Surveillance for the management of prostate cancer: a population-based analysis. Can Urol Assoc J. 2016;10(9–10):333-338.
9. Kinsella N, Stattin P, Cahill D, et al. Factors influencing men’s choice of and adherence to active surveillance for low-risk prostate cancer: a mixed-method systematic review. Eur Urol. 2018;74(3):261-280.
10. Moher D, Liberati A, Tetzlaff J, Altman DG. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. BMJ. 2009;339:b2535.
11. Tong A, Flemming K, McNees E, Oliver S, Craig J. Enhancing transparency in reporting the synthesis of qualitative research: ENTREQ. BMC Med Res Methodol. 2012;12(1):181.
12. Cooke A, Smith D, Booth A. Beyond PICO: the SPIDER tool for qualitative evidence synthesis. Qual Health Res. 2012;22(10):1435-1443.
13. CASP-Qualitative-Checklist-2018.pdf [Internet]. [cited 2020 Apr 10]. Available from https://casp-uk.net/wp-content/uploads/2018/01/CASP-Qualitative-Checklist-2018.pdf
14. Thomas J, Harden A. Methods for the thematic synthesis of qualitative research in systematic reviews. BMC Med Res Methodol. 2008;8(1):45.
15. Bellardita L, Graffigna G, Donegani S, et al. Patient’s choice of observational strategy for early-stage prostate cancer. Neurosci Trends. 2012;12(1):107-116. doi:10.7358/neur-2012-012-bell
16. Berger ZD, Yeh JC, Carter HB, Pollack CE. Characteristics and experiences of patients with localized prostate cancer who left an active surveillance program. Patient. 2014;7(4):427-436.
17. Chapple A, Ziebland S, Herxheimer A, Mcpherson A, Shepperd S, Miller R. Is ‘watchful waiting’ a real choice for men with prostate cancer? A qualitative study: choosing ‘watchful waiting’ for prostate cancer. BJU Int. 2002;90(3):257-264.
18. Davison BJ, Oliffe JL, Pickles T, Mroz L. Factors influencing men undertaking active surveillance for the management of low-risk prostate cancer. Oncol Nurs Forum. 2009;36(1):89-96.
19. Fitch M, Pang K, Ouellet V, et al. Canadian Men’s perspectives about Active Surveillance in prostate cancer: need for guidance and resources. BMC Urol. 2017;17(1):98.
20. Holmboe ES, Concato J. Treatments decisions for localized prostate cancer. J Gen Intern Med. 2000;15:694-701.
21. Lyons KD, Li HH, Mader EM, et al. Cognitive and affective representations of active surveillance as a treatment option for low-risk prostate cancer. Am J Men’s Health. 2017;11(1):63-72.
22. Mallapareddi A, Ruterbusch J, Reamer E, Eggy S, Xu J. Active Surveillance for low-risk localized prostate cancer: what do men and their partners think? Fam Pract. 2017;34(1):90-97.
23. O’Callaghan C, Dryden T, Hyatt A, et al. What is this Active surveillance thing? Men’s and partners’ reactions to treatment decision
making for prostate cancer when Active Surveillance is the recommended treatment option: what is this Active Surveillance thing? Psycho Oncol. 2014;23(12):1391-1398.

24. Parker C, Flynn M. Usefulness of written information in treatment choice for men with low-risk prostate cancer. Canc Nurs Pract. 2016;15(4):23-27.

25. Seaman AT, Taylor KL, Davis K, et al. Why men with a low-risk prostate cancer select and stay on Active Surveillance: a qualitative study. PLoS ONE. 2019;14(11):e0225134.

26. Volk RJ, McFall SL, Cantor SB, et al. ‘It’s not like you just had a heart attack’: decision-making about Active Surveillance by men with localized prostate cancer. Psycho Oncol. 2014;23:467-472.

27. Xu J, Neale AV, Dailey RK, Eggly S, Schwartz KL. Patient perspective on watchful waiting/active surveillance for localized prostate cancer. J Am Board Fam Med. 2012;25:763-770.

28. Steginga SK, Occhipinti S. The application of the heuristic-systematic processing model to treatment decision making about prostate cancer. Med Decis Mak. 2004;24:573-583.

29. Steginga SK, Occhipinti S, Gardiner RA, Yaxley J, Heathcote P. Making decisions about treatment for localized prostate cancer. BJU Int. 2002;89:255-260.

30. Brewer NT, DeFrank JT, Gilkey MB. Anticipated regret and health behavior: a meta-analysis. Health Psychol. 2016;35(11):1264-1275.

31. Peters E, McCaul KD, Stefanek M, Nelson W. A heuristics approach to understanding cancer risk perception: contributions from judgment and decision-making research. Ann Behav Med. 2006;31(1):45-52.

32. Chambers SK, Hyde MK, Oliffe JL, et al. Measuring masculinity in the context of chronic disease. Psychol Men Masc. 2016;17:228-242.

33. Power TE, Swartzman LC, Robinson JW. Cognitive-emotional decision making (CEDM): a framework of patient medical decision making. Patient Educ Counsel. 2011;83:163-169.

34. Leventhal H, Phillips LA, Burns E. The Common-Sense Model of Self-Regulation (CSM): a dynamic framework for understanding illness self-management. J Behav Med. 2016;39:935-946.

SUPPORTING INFORMATION
Additional supporting information may be found in the online version of the article at the publisher’s website.

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