Submitted: 29 January, 2021 Accepted: 04 March, 2021 Published: 08 July, 2021 DOI:10.31083/jomh.2021.033

JOMH Journal of Men's Health

Original Research

The influence of education level on sleep-related outcomes and sleep management strategies in prostate cancer patients

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Abstract

Introduction: Insomnia symptoms are common among prostate cancer (PCa) patients. We explore here whether education level is associated with sleep-related outcomes, and preference for sleep management strategies.

Methods: A short online survey was posted on Facebook with the help of Prostate Cancer Foundation New Zealand. The survey consisted of scales on sleep-related parameters, as well as questions about sleep management strategies.

Results: Demographic data were similar between participants with (n = 49) and without (n = 32) university education. Participants with no university education were more likely to receive external beam radiation (P = 0.035) than participants without university education. In addition, those without university education also had significantly more comorbidities (P = 0.046), higher body mass index (P = 0.048), and more severe fatigue (P = 0.031) but similar levels of insomnia symptoms (P = 0.50), sleepiness (P = 0.36) and morningness-eveningness (P = 0.07) than those with university education. After controlling for age, number of comorbidities, and insomnia severity, lower education was associated with lower likelihood of having used herbal remedies or supplements for improving sleep (OR = 0.208, P = 0.041). Education level is not related to the use of sleep medication, cognitive behaviour therapy, mindfulness, acupuncture, hypnosis for sleep management in PCa patients.

Conclusion: Education level is not associated with insomnia symptoms, but with fatigue level and the use of herbal remedies or supplements for sleep management in PCa patients.

Keywords

Prostate cancer; Insomnia; Management strategies; Education; Treatment side effects

1. Introduction

Sleep disturbance and insomnia may occur in cancer patients regardless on their stage of cancer trajectory. This is also true for men with prostate cancer (PCa) [1–3]. For example, urinary symptoms after a prostatectomy may wake up patients multiple times a night [1]. Furthermore, androgen deprivation therapy (ADT) in men with systemic PCa, often causes nocturnal hot flashes that lead to frequent awakening [2, 4, 5]. Sleep disruption can lead to other outcomes such as daytime fatigue, sleepiness, and cognitive changes that affect patients' quality of life. Some of these changes may influence patients' work productivity and social relationships with the people around them. In addition, insufficient sleep in general is also associated with elevated health risks like cardiovascular and metabolic risks [6].

Given the higher prevalence of insomnia symptoms in PCa patients [1–3], there is a need for interventions that can help these patients sleep better. Various strategies for sleep management have been investigated in cancer patients. For

example, cognitive behaviour therapy (CBT) and mindfulness are effective in improving sleep in breast cancer patients [7], but we are aware of no study which have tested these in solely PCa patients. Other strategies like hypnosis [8] and acupuncture [9] have been previously examined for their ability in alleviating sleep problems in other populations with varying efficacy. Some people may also take supplementary or complementary therapies with the aim of improving their sleep.

We recently conducted a survey on sleep management strategies in PCa patients in Aotearoa/New Zealand [10]. In that study, insomnia symptoms affected the level of sleepiness and fatigue in PCa patients as well as their preference for sleep management strategies. In this study, we have performed additional analyses from that study to explore whether education level is associated with sleep-related outcomes, and preference for using various sleep management strategies.

Education level is an important parameter to consider in cancer survivorship as it can be a determinant for various outcomes. For example, higher education level is associated with lower mortality [11, 12] and the likelihood of receiving more aggressive treatment [13] in the PCa population. Furthermore, PCa patients with lower education had worse functioning (physical, emotional, social), vitality, mental health, general health, urinary and sexual side effects than those with higher education background [14].

Various factors may be linked to why higher education is associated with better health outcomes. Hammond [15] has previously discussed that the benefit of education may be related to social and economic factors. For example, people with higher education may have parents with higher education as well, come from a family with higher household income, or have a job that provides higher income. People who have higher income may have better resources to access health services and treatment.

Currently, we are not aware of any study that has explored how education background influences the use of various sleep management strategies in PCa patients, or other populations. There is, however, published data that higher education is associated with a higher likelihood of using complementary and alternative medicine in cancer care [16, 17]. In addition, as noted above, health outcomes appear to be better in people with higher education background [14]. In summary, education level may potentially influence the choice of strategies for sleep management among PCa patients.

Here, we explored if education level is a factor that may determine sleep-related outcomes (e.g., insomnia symptoms, sleepiness, fatigue), as well as patients' preference for sleep management strategies. Understanding this information may help inform healthcare providers on whether patients' educational background may influence the risk for certain sleep-related side effects, and their openness in using various sleep management strategies.

2. Methods

2.1 Participants

Participants were recruited online primarily through Facebook advertising, specifically targeting New Zealand men over 40 years old. We also contacted the Prostate Cancer Foundation New Zealand to help distribute our survey link through their social media and support groups. Our survey was built on the Research Electronic Data Capture (REDCap) database, which is hosted by the University of Otago and is subject to the New Zealand Health Information Privacy Code. The study protocol was approved by the University of Otago Human Ethics Committee (H18/078).

When the survey link was clicked, individuals were asked a screening question to indicate if they had been diagnosed with PCa. Those who answered "Yes" then viewed the Participant Information Sheet and Consent Form. Only participants who consented to this study proceeded to the survey. The survey took approximately 15-20 minutes to complete and at the end of the survey participants were asked if they wish to enter a raffle for a $100 NZD gift card.

2.2 Measures

2.2.1 Demographics

Participants answered standard demographic questions including their age, gender, relationship status, ethnicity, education, employment, income status, height, weight, medical conditions, and PCa treatment history.

2.2.2 Insomnia Severity Index

Insomnia symptoms were evaluated using the Insomnia Severity Index (ISI) [18]. This questionnaire contains 7 items related to difficulties falling asleep, staying asleep, problems with waking too early and the satisfaction level with their current sleep pattern. ISI also includes questions on how worried respondents were about their current sleep problem, how noticeable they thought it was to others, and how much their sleep problem interfered with their daily functioning. Each item can be rated on a scale from 0-4, with a higher score indicating a more severe insomnia. The internal consistency in our sample was $\alpha = 0.87$.

2.2.3 Daytime sleepiness

Daytime sleepiness was measured using the Epworth Sleepiness scale (ESS) [19]. This questionnaire assessed the likelihood of the participant falling asleep in eight different daytime situations (e.g., when reading, talking to someone, or sitting after lunch). Each item was rated on a scale from 0 (would never doze) to 3 (high chance of dozing), with a lower score indicating a lower chance of dozing. The internal consistency in our sample was $\alpha = 0.82$.

2.2.4 Fatigue

The Brief Fatigue Inventory (BFI) was used to assess fatigue severity [20]. This scale assessed participants' level of fatigue and how fatigue interfered their functioning on a variety of

parameters. BFI contains questions on participants' level of fatigue at that moment, generally in the last 24 hours, and the worst level experienced in the previous 24 hours. Each item can be answered on a scale of 0-10, with a higher score indicating a more severe fatigue. The internal consistency in our sample was $\alpha = 0.94$.

2.2.5 Morningness-eveningness

The reduced Morningness-Eveningness Questionnaire (MEQ) was included to determine participants' chronotype [21]. This scale evaluated participants' preference towards 'morningness' or 'eveningness'. It consists of five questions; on participants' preferences of time to get up, how tired they were during the first half-hour after having woken in the morning, what time in the evening they felt tired, what time during the day they felt their best, and whether they consider themselves a "morning" or "evening" person. The second question could be rated on 1-4 scale, the last item could be rated on a 0-6 scale, and the other three could be rated on a 1-5 scale. A higher overall score indicated a morning person. The internal consistency in our sample was $\alpha = 0.51$.

2.2.6 Additional questions

We also included: "Which of the following strategies would you consider for managing sleep problems?" The strategies we asked were related to lifestyle/behaviour adjustment, based on the items from the Sleep Hygiene Index [22]. For each, the answer options were "Yes" or "No". In addition, we asked if participants had used various treatments (medication, CBT, hypnosis, mindfulness, acupuncture, and herbal remedies or supplements) previously for improving their sleep. If they had not used the treatments before, we asked if they would consider using them if poor sleep became a problem for them in the future.

Lastly, we added one open-ended question: Could you please provide additional details on what sleep management strategies you prefer?

2.2.7 Data analyses

SPSS (version 25, IBM) was used for statistical analyses. Demographic data were compared between those with and with no university education, using either *t*-test or chi-squared test. ANCOVA was used to compare the scores for sleepiness, fatigue, morningness-eveningness, insomnia symptoms, body mass index (BMI) and number of comorbidities between participants with and without university education background, while using age as a covariate. Logistic regression was used to determine if education background (no university education = 1, had university education = 2) predicted the use or willingness to use the various strategies for managing sleep (while controlling for age, number of comorbidities, insomnia severity). $P < 0.05$ was considered significant. Themes from the open-ended questions were identified by EW, and the number of participants with these themes were counted.

3. Results

In this study, 442 people clicked the survey link, 54 had not been diagnosed with PCa, 79 closed the link immediately, and 196 did not consent to the study. Thus, 114 consented to the study but 32 were removed due to substantial missing data. In this paper, we analysed data from 82 men who reported to have been diagnosed with PCa. From these, 32 had no university education, and 49 had university education.

3.1 Demographics

As noted on Table 1, demographic data did not differ between those with and without university education. However, we found that participants without university education (56.3%) were more likely to have previously received external beam radiation therapy than those with university education (32.7%, χ^2 (1) = 4.43, $P = 0.035$). In addition, those with university education had significantly fewer comorbidities (F (1,65) = 4.13, $P = 0.046$) and lower Body Mass Index (BMI, F (1,60) = 4.06, $P = 0.048$) than participants without university education (Fig. 1). More detailed analyses on the specific comorbidities showed a significantly elevated likelihood of having stomach ulcer in participants with no university education (27.3% vs. 4.8%, $P = 0.03$). The proportion of participants with the other comorbidities did not differ based on education level. However, we note that the difference approached significant for diabetes (34.8% vs. 10%, $P = 0.05$).

3.2 Sleep-related outcomes

As shown on Fig. 2B, after controlling for age, participants with university education had significantly less severe fatigue than those without university education (F (1,65) = 4.87, $P = 0.03$). The scores for insomnia symptoms (Fig. 2A), and sleepiness (Fig. 2D) did not differ, but the participants with no university education tended to be less of a morning person than those with university education (Fig. 2C, F (1,65) = 3.36, $P = 0.07$).

3.3 Education as a predictor for strategy preference

Table 2 shows the association between education background and the preference for various sleep management strategies, after controlling for age, number of comorbidities, and insomnia severity. Here we found that having no education background is associated with a lower likelihood of having used herbal remedies or supplements for improving sleep (OR = 0.21, $P = 0.04$). However, education background is not a predictor for using the other sleep management strategies we assessed. Interestingly, we found that more severe insomnia symptoms are associated with using sleep medication (OR = 1.12, $P = 0.04$), and more comorbidities are associated with using herbal remedies or supplements for improving sleep (OR = 2.37, $P = 0.01$).

Among those who had not used the various strategies, education background is also not associated with their willingness to use any of the strategies we assessed (Table 3).

TABLE 1. Demographic and health outcomes of participants based on their education background

Parameters	No University Education	Had University Education	
Age	68.8 ± 6.0	67.6 ± 6.5	t (66) = 0.69, P = 0.49
Ethnicity			χ^2 (4) = 5.09, P = 0.28
NZ European	29 (90.6%)	44 (91.7%)	
Māori	1 (3.1%)	1 (2.1 %)	
Pacific people	2 (6.2%)	0	
Asian	0	1 (2.1 %)	
Other ethnicity	0	2 (4.2%)	
Missing data			13
Relationship			χ^2 (1) = 0.10, P = 0.28
Single	7 (21.9%)	12 (25%)	
In a relationship	25 (78.1%)	36 (75%)	
Missing datum			1
Partner's age	63.4 ± 9.1	62.3 ± 10.1	t (53) = 0.39, P = 0.70
Relationship duration	32.9 ± 15.6	30.9 ± 15.5	t (56) = 0.48, P = 0.64
Partner's gender			χ^2 (1) = 0.81, P = 0.37
Female	23 (92%)	34 (97.1%)	
Male	2 (8%)	1 (2.9%)	
Missing data			2
Marital status			χ^2 (5) = 3.02, P = 0.70
Never married	2 (6.3%)	2 (4.2%)	
De facto relationship	4 (12.5%)	3 (6.3%)	
Divorced	2 (6.3%)	6 (12.5%)	
Married/civil union	19 (59.4%)	30 (62.5%)	
Separated	3 (9.4%)	2 (4.2%)	
Widowed	2 (6.3%)	5 (10.4%)	
Missing datum			1
Employment			χ^2 (2) = 0.32, P = 0.83
Working full time	12 (37.5%)	16 (32.7%)	
Working part time	5 (15.6%)	10 (20.4%)	
Retired	15 (46.9%)	23 (46.9%)	
Treatment history			
Radical prostatectomy	14 (43.8%)	27 (55.1%)	χ^2 (1) = 0.10, P = 0.32
External beam radiation	**18 (56.3%)**	**16 (32.7%)**	**χ^2 (1) = 4.43, P = 0.04**
Brachytherapy	6 (31.6%)	7 (20%)	χ^2 (1) = 0.90, P = 0.34
Active surveillance	5 (38.5%)	14 (42.4%)	χ^2 (1) = 0.06, P = 0.81
Orchiectomy	0	1 (3.3%)	χ^2 (1) = 0.49, P = 0.48
ADT	13 (40.6%)	18 (36.7%)	χ^2 (1) = 0.12, P = 0.73
Antiandrogens	1 (7.1%)	8 (24.2%)	χ^2 (1) = 1.86, P = 0.17
Other treatment	1 (7.1%)	7 (23.3%)	χ^2 (1) = 1.68, P = 0.20
Combined household income			χ^2 (1) = 2.03, P = 0.15
< $60,000	15 (60%)	19 (42.2%)	
≥ $60,000	10 (40%)	26 (57.8%)	
Missing data			11

However, younger age is associated with a willingness to use sleep medication (OR = 0.80, P = 0.02), and more severe insomnia symptoms are associated with a willingness to use CBT for improving sleep (OR = 1.16, P = 0.02).

Additionally, we found that education background does not affect the likelihood of using lifestyle or sleep-related behaviour adjustment (data not shown).

3.4 Qualitative data

In this study 59 participants answered the question "Could you please provide additional details on what sleep management strategies you prefer?". Using relaxation or meditation was the most common response (11 participants). For example, participant 113 answered "Prefer being relaxed and peaceful, and praying", and participant 228 reported "The meditation mantra works well for me". Eight participants were unsure or don't know what sleep management strategy they prefer to use. As examples, participant 89 claimed "I don't have any. I go to bed and see what happens when I get there. Every night is different", and participant 406 stated "I would like to have a decent nights sleep without waking up and having a piss at regular intervals...as well as the weird dreams I have...how to achieve this at my age is beyond me...". Five participants preferred natural remedies, and another

JOMH
Journal of Men's Health

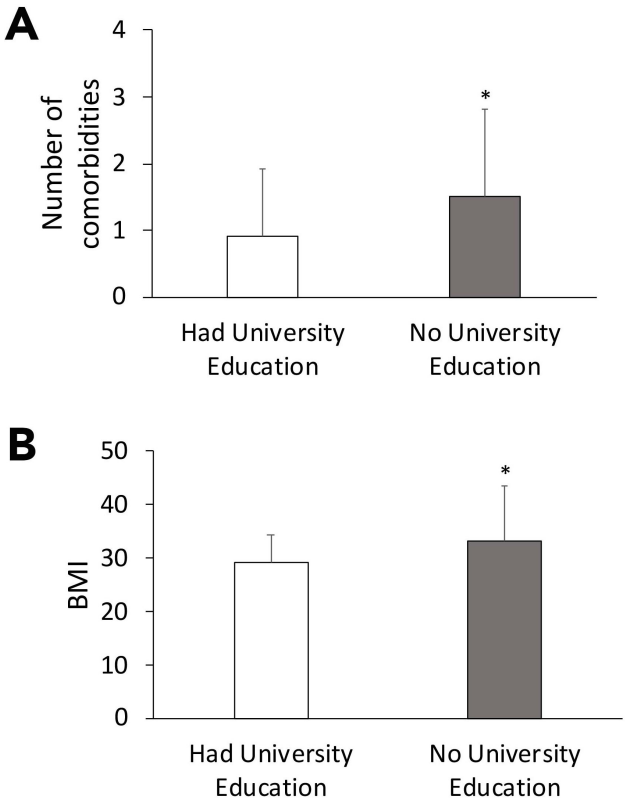

FIG. 1. The average and standard deviation for the total number of comorbidities (A) and BMI (B) in PCa patients with (white bars) and without (grey bars) university education. Patients without university education had significantly more comorbidities and higher BMI than those who had university education. *Significantly higher than the data from patients without university education, $P < 0.05$.

five do not prefer using drugs to manage sleep problems. Participant 110 reported "I prefer natural strategies rather than medical", and participant 174 stated "least like drugs. but I use marijuana… I prefer natural remedies".

4. Discussion

There are several main findings from this study. First, patients with a lower education background were more likely to have received external beam radiation than those with higher education. Secondly, higher education is associated with fewer comorbidities, lower BMI, and less severe fatigue, but similar levels of insomnia symptoms, sleepiness and morningness-eveningness in PCa cancer patients. Thirdly, education level is associated with the use of herbal remedies or supplements, but not other assessed strategies (sleep medication, CBT, mindfulness, hypnosis, acupuncture) for improving sleep. Thematic analyses further revealed that the most common strategies participants preferred were those involving relaxation or meditation, natural remedies, and non-pharmacological treatment.

4.1 Health-related outcomes

In this study we found that education level does not influence the presentation of insomnia symptoms, sleepiness and chronotype. These are similar to findings from other studies [23, 24] in mixed-types of cancer populations which indicated that education level is also not linked to sleep disturbance. Based on those findings, it's not surprising that we also did not find any association between education levels and sleepiness as well as chronotype.

Participants without university education in our study, however, had more comorbidities, a higher BMI and more severe fatigue than those with university education. We are aware of no other such report in PCa patient population. Data from the CaPSURE study [14] did not find any influence of education level on the number of comorbidities or BMI in PCa patients. Other studies showed that lower education level has been associated with obesity in the general population [25, 26], more comorbidities in cancer patients in general [12], and higher fatigue level in PCa [27, 28] as well as [29] breast cancer populations. We also recognize that previous research [30–32] has reported the opposite results on the relationship between education and fatigue levels in cancer patients, i.e., those with higher education having higher fatigue level. This discrepancy may be due

TABLE 2. Associations between education and the use of strategies to manage sleep, while controlling for age, number of comorbidities, and insomnia severity

Parameters	OR	CI	*P* value
Sleep medication			
Age	1.01	0.91-1.11	0.86
Number of comorbidities	1.69	0.95-3.02	0.07
Insomnia severity	**1.12**	**1.01-1.24**	**0.04**
No university education	0.52	0.13-2.03	0.35
Cognitive behavioural therapy			
Age	0.95	0.82-1.10	0.46
Number of comorbidities	1.46	0.67-3.18	0.35
Insomnia severity	1.18	0.99-1.40	0.07
No university education	0.57	0.08-4.15	0.58
Hypnosis			
Age	0.97	0.76-1.25	0.83
Number of comorbidities	1.44	0.38-5.45	0.59
Insomnia severity	0.93	0.72-1.20	0.58
No university education	1.49	0.08-28.4	0.79
Mindfulness			
Age	0.94	0.86-1.03	0.19
Number of comorbidities	1.45	0.86-2.43	0.16
Insomnia severity	0.95	0.87-1.04	0.29
No university education	0.50	0.16-1.56	0.23
Acupuncture			
Age	0.89	0.75-1.06	0.19
Number of comorbidities	1.20	0.43-3.37	0.73
Insomnia severity	1.11	0.91-1.36	0.30
No university education	1.74	0.20-15.0	0.61
Herbal remedies or supplement use			
Age	0.94	0.85-1.04	0.23
Number of comorbidities	**2.37**	**1.24-4.53**	**0.01**
Insomnia severity	1.08	0.98-1.20	0.12
No university education	**0.21**	**0.05-0.94**	**0.04**

No university education = 1, having university education (reference category) = 2.

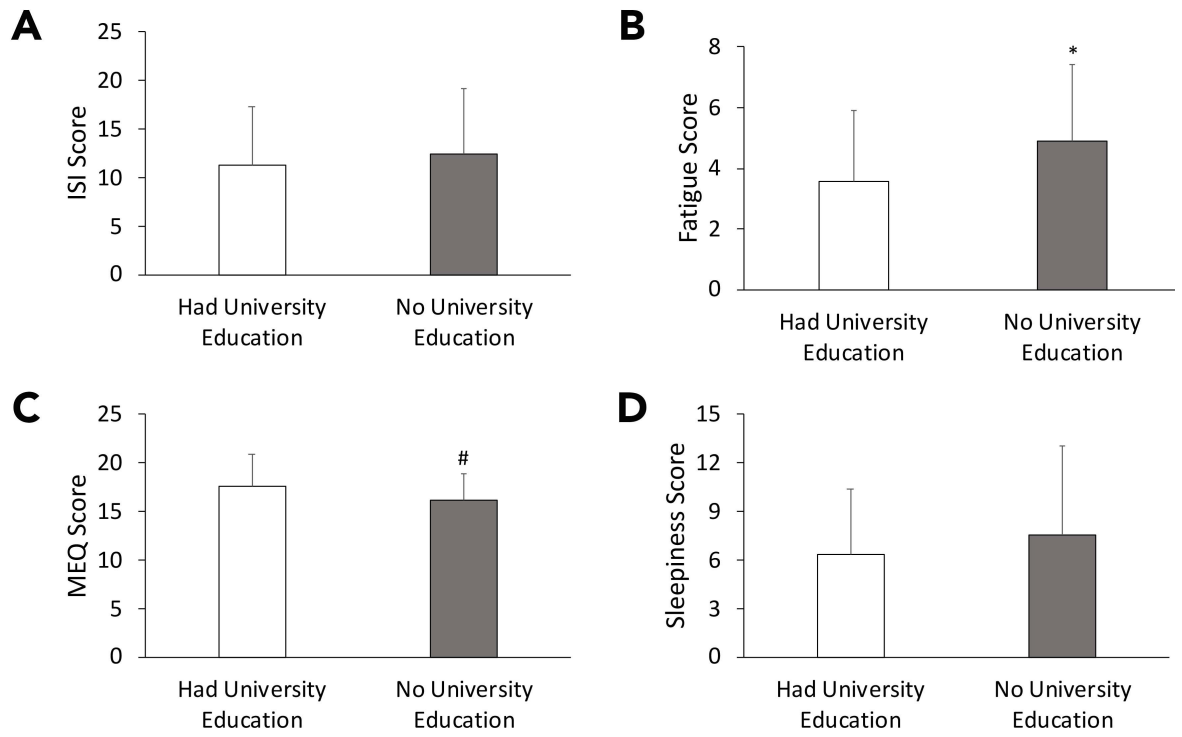

FIG. 2. The average and standard deviation for insomnia symptoms (A), fatigue (B), morningness-eveningness (C), and sleepiness (D) scores in PCa patients with (white bars) and without (grey bars) university education. Patients without university education had significantly more severe fatigue than those who had university education. *Significantly higher than the data from patients without university education, $P < 0.05$. #The difference approached significance, $P < 0.10$.

to multiple reasons, including comorbidities, cancer treatment type, socioeconomic factors as well as how fatigue was assessed (e.g., type of questionnaire, when during cancer trajectory they were administered).

4.2 Sleep management strategies

In the current study we found that patients with no university education were less likely to have used herbal remedies or supplements to improve their sleep, as compared to those with university education. This finding is not surprising because a previous report in Aotearoa New Zealand [33] and other countries [34, 35] had identified that higher education level is a predictor for the use of health supplements in the general population. As previously noted, higher education may be associated with a higher income level, and thus could allow for the purchasing of unsubsidised supplements. Furthermore another study showed that supplement use is more common in older individuals, and those with NZ European background [36], both of which reflect the general demographic of our study participants. While these supplements may not be for sleep improvement, the high prevalence of supplement use among men in Aotearoa New Zealand [36] (higher than in Australia [34] but lower than in the US [35]) may suggest that many people, particularly those with higher education, elect self-management for health issues, and possibly for sleep problems too.

Our findings also indicated that education level does not predict the use of other sleep management strategies that we asked (sleep medication, CBT, mindfulness, hypnosis, acupuncture). These results are similar to the findings from studies in other cancer populations, for example on the use of mindfulness [37, 38] and acupuncture [39] in cancer care. However, our data on sleep medication use differs from the findings in the general population, where sleep medication users are more likely to be of lower education than non-users [40, 41]. Similarly, we showed that education level does not influence the willingness to try any of the strategies we asked. In contrast, higher education has been associated with the willingness to try certain strategies, such as acupuncture [42] and hypnosis [43], for cancer care in mixed-type cancer population. Various factors may influence the discrepancy of our data and those of past studies on the use and willingness to try the various strategies, including differences in demographic and population type.

4.3 Treatment history

In this study we found that patients with no university background were more likely to have been treated with external beam radiation than those with university education. One potential reason is the significantly higher BMI among those without university education than those with university education. Past studies indicated that obesity is linked to worse outcomes after prostatectomy [44, 45]. Thus, there is a possibility that patients without university education in our study might not be good candidates for prostatectomy as a primary treatment because of their high BMI (33.3 ± 10.4), and thus were prescribed external beam radiation.

Our finding, however, is in contrast to the data from the

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Journal of Men's Health

TABLE 3. Associations between education and the willingness to try strategies to manage sleep, while controlling for age, number of comorbidities, and insomnia severity

Parameters	OR	CI	*P* value
Sleep medication			
Age	**0.80**	**0.67-0.97**	**0.02**
Number of comorbidities	0.93	0.35-2.46	0.89
Insomnia severity	1.17	0.97-1.42	0.10
No university education	0.29	0.04-2.22	0.23
Cognitive behavioural therapy			
Age	0.94	0.84-1.04	0.22
Number of comorbidities	0.872	0.48 – 1.60	0.66
Insomnia severity	**1.159**	**1.03 – 1.31**	**0.02**
No university education	0.372	0.10 – 1.37	0.14
Hypnosis			
Age	0.99	0.91-1.09	0.88
Number of comorbidities	1.39	0.81-2.39	0.24
Insomnia severity	1.08	0.99-1.19	0.08
No university education	0.76	0.23-2.52	0.66
Mindfulness			
Age	0.89	0.78-1.02	0.09
Number of comorbidities	0.68	0.32-1.43	0.31
Insomnia severity	0.98	0.87-1.11	0.80
No university education	0.57	0.14-2.31	0.43
Acupuncture			
Age	0.97	0.89-1.07	0.56
Number of comorbidities	1.13	0.68-1.88	0.63
Insomnia severity	1.03	0.94-1.12	0.58
No university education	1.03	0.35-3.03	0.96
Herbal remedies or supplement use			
Age	0.98	0.88-1.10	0.72
Number of comorbidities	0.81	0.39-1.68	0.58
Insomnia severity	0.95	0.86-1.06	0.39
No university education	0.58	0.16-2.10	0.41

No university education = 1, having university education (reference category) = 2.

CaPSURE study in the Unites States [13], in which they found that higher education was associated with lower likelihood for receiving ADT but more tendency for radiotherapy in patients over 75. Their finding for patients in 65-74 (comparable to our study demographic) only approached significance. Various factors may potentially explain the difference in our finding and the data from the CaPSURE study, including access to treatment, medical insurance, and socioeconomic background of the participants.

4.4 Limitation

Our study has several limitations. Considering that the data were collected online, our finding may not be representative for patients who are not internet-user. In addition, our sample size was small, and majority of participants were of NZ European background, in a relationship, and had high household income. As noted in our other study [10], our recruitment may be biased for patients with insomnia because of the high percentage of participants with insomnia symptoms. There may also be a selection bias for participants who were interested in health, and for those without late-stage cancer. The latter one was evident from the fact that only one participant had received chemotherapy.

We also recognize that we only asked about six different strategies, and there are other sleep management strategies that we did not assess. As noted in the qualitative data, some patients appeared to be interested in using relaxation or meditation-based treatment for managing sleep, as compared to pharmacological treatment. Among the ones we asked, the most relevant one would be the mindfulness therapy. However there may be other strategies which involves relaxation such as yoga [7] or progressive muscle relaxation/deep breathing exercise [46, 47], both of which have previously been tested as a treatment to improve sleep.

5. Conclusions

In conclusion education level, although not associated with insomnia symptoms, sleepiness and morningness-eveningnes, is an important determinant for other health outcomes (e.g., weight gain and fatigue) and the use of sleep management strategies (particularly on the use of herbal remedies or supplements) in PCa patients. Clinically, these findings provide evidence for clinicians that they may need to provide additional support for PCa patients with lower educational background. Such support could be in the form of patient education on healthy lifestyle as well as effective management strategies for sleep problems. Clinicians should also recognize that economic and social factors may intersect with education background.

Author contributions

Conceptualization, SD, AC, EW; Methodology, SD, AC, EW; Formal Analysis, EW; Investigation, SD, AC, EW; Resources, EW; Writing - Original Draft, EW; Writing - Review & Editing, SD, AC, EW; Supervision, EW; Project Administration, SD, EW; Funding Acquisition, SD, EW.

Ethics approval and consent to participate

The study protocol was approved by the University of Otago Human Ethics Committee (H18/078). All participants provided their consent to participate online.

Acknowledgment

We thank Prostate Cancer Foundation New Zealand and their support groups for helping with our recruitment by distributing our survey online.

Funding

This project was funded by a start-up fund from the Department of Anatomy at the University of Otago to Dr Erik Wibowo.

Conflict of interest

The authors declare no conflict of interest.

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