Do Swiss urologists and Swiss internists screen themselves and their relatives for prostate cancer? A questionnaire study

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Summary

PURPOSE: Prostate-specific antigen (PSA) screening for men at risk of prostate cancer is controversial. The current recommendation is to raise awareness of prostate cancer and offer PSA screening in accordance with shared decision-making. Whether the possibility of a PSA screen is discussed with the patient depends on the treating physician, but data on physicians’ attitudes towards PSA screening are scarce. This study aimed to examine internists’ and urologists’ personal PSA screening activity as an indicator of their attitude towards PSA screening.

MATERIALS AND METHODS: Members of the Swiss Society of Urology and the Swiss Society of General Internal Medicine were asked in 2020 to anonymously complete an online survey about personal PSA screening behaviour for themselves, their fathers, brothers and partners. Categorical and continuous variables were compared by chi-squared tests and t-tests, respectively.

RESULTS: In total, 190/295 (response rate: 64%) urologists and 893/7400 (response rate: 12%) internists participated in the survey. Of the participants, 297/1083 (27.4%) were female. Male urologists >50 years of age screened themselves more often than male internists >50 years of age (89% vs 70%, p <0.05). Furthermore, urologists reported recommending screening statistically significantly more often than internists to their brother, father or partner regardless of their sex (men: 38.1% vs 16.5%; p <0.05; women: 81.8% vs 32.2%; p <0.05).

CONCLUSIONS: Most participating male physicians >50 years of age have screened themselves for prostate cancer. Furthermore, PSA screening of relatives was significantly associated with the urology specialty. The reasons physicians screen themselves substantially more often than the public and why male and female urologists as well as male internists perform PSA screening more frequently in their private environment than female internists should be further examined.

Introduction

The widespread adoption of prostate-specific antigen (PSA) screening is controversial. The PLCO (Prostate, Lung, Colorectal and Ovarian) trial found no difference in prostate cancer-specific survival after 7 years between patients who underwent annual PSA screening and those under usual care [1]. As a result, the US Preventive Service Task Force (USPSTF) advised against population-wide PSA screening in 2012 [2]. However, the European Randomised Study of Screening for Prostate Cancer (ERSPC) could demonstrate a reduction in prostate cancer mortality while increasing the detection of clinically insignificant cancer [3]. This conflicting evidence led the Swiss Society of General Internal Medicine (SSGIM) to emphasise the importance of a thorough discussion of the risks and benefits before conducting a PSA screen as part of its ‘smarter medicine’ initiative in 2014. This emphasis on shared decision-making (SDM) is consistent with the guidelines set forth by the European Association of Urology (EAU) and the American Urological Association [4–6]. In 2018, the USPSTF revoked its recommendation against PSA screening, favouring individualised PSA screening and the EU updated its “Europe’s Beating Cancer Plan” in 2022 and initiated programmes to formally endorse PSA screening in men up to the age of 70 years [7–8].

It is estimated that between 31% and 50% of Swiss men undergo opportunistic PSA screening [9–10]. In an opportunistic screening setting, men are either screened on their own initiative or on their physician’s recommendation. Therefore, the physician’s attitude towards PSA screening is essential. To capture how physicians weigh
the risks and benefits of PSA screening, we conducted an online survey about how Swiss internists and urologists screen themselves and their relatives. The primary aim was to assess whether personal PSA screening behaviour differed between urologists and internists and by the sex of the physician.

**Methods**

The survey for this study was collaboratively designed by all the authors, either urologists or internists, ensuring comprehensive coverage of the relevant aspects and unbiased wording. The aim was to maximise the response rate by creating a user-friendly survey. To achieve this, the survey was designed so that it would take only two minutes for participating physicians to complete all eight questions. It was created using the software Alchemer, formally known as SurveyGizmo (Alchemer, Colorado, USA).

The invitation to participate in the online survey was sent by email in 08/2020 to all members in the registries of the Swiss Society of Urology (SSU) and the SSGIM. It could be answered anonymously in any of the Swiss national languages, namely German, French or Italian. The survey consisted of demographic questions about age, sex, medical specialty and work setting. Personal PSA screening behaviour was assessed using questions about if and at what age the physicians had screened themselves, their fathers, brothers and partners. If they answered that they had performed screening, they were asked whether shared decision-making was done beforehand and whether there was a positive family history of prostate cancer in first-degree relatives. For the complete survey, see the appendix. A reminder to participate in the survey was issued in 09/2020, and the survey was closed six weeks later. None of the respondents received any financial or non-monetary benefits. The survey database only collected responses if all eight questions had been answered.

In order to compare personal use of PSA screening, respondents were divided into groups based on their sex and specialty. Furthermore, each of the groups was stratified by age into the following strata: <40 years, 40–49 years, 50–59 years, 60–69 years and ≥70 years. Data entry and visualisation were done using Microsoft Excel (2016 versions; Microsoft Corporation, Redmond, Washington, USA). Categorical and continuous variables were compared using the Chi-squared test and t-test, respectively. A value of α <0.05 was defined as statistically significant. Statistical analysis was performed using R 3.6 software (R Foundation, Vienna, Austria).

**Ethics statement**

This survey study adhered to the principles of the Declaration of Helsinki.

**Results**

Overall, 1083 out of 7695 physicians completed the survey, representing an overall response rate of 14%. The response rate was substantially higher among urologists (190 of 295; 64%) than among general internists (893 of 7400; 12%). The participants’ mean age was 54.4 years (standard deviation [SD]: 11.6). Urologists tended to be younger than internists (mean age [SD]: urologists 50.5 years [11.3]; internists 55.3 years [11.4]). In total, 297 of 1083 (27.4%) respondents were women. The demographic data are presented in table 1.

Among male physicians >50 years of age, statistically significantly more urologists performed self-screening than internists (89% vs 70%; p <0.05). Self-screening frequencies of the different age groups are displayed in figure 1. Furthermore, urologists recommended PSA screening to their fathers, brothers and partners more often than general internists (43% [95% confidence interval (CI): 0.36–0.50] vs 23% [95% CI: 0.20–0.26]; p <0.05, figure 2).

The mean age at the time of self-screening and screening of brothers was statistically significantly lower in urologists than internists (self: 47.6 [95% CI: 46.4–48.8] vs

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**Table 1:**

Baseline characteristics of participants.

<table>
<thead>
<tr>
<th></th>
<th>Urologists (n = 190)</th>
<th>Internists (n = 894)</th>
<th>Overall (n = 1084)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (years)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;40 years</td>
<td>6 (36.4%)</td>
<td>57 (20.7%)</td>
<td>65 (21.9%)</td>
</tr>
<tr>
<td>40–49 years</td>
<td>10 (45.5%)</td>
<td>78 (28.4%)</td>
<td>88 (29.6%)</td>
</tr>
<tr>
<td>50–59 years</td>
<td>3 (13.6%)</td>
<td>91 (33.1%)</td>
<td>94 (31.6%)</td>
</tr>
<tr>
<td>≥70 years</td>
<td>1 (4.5%)</td>
<td>44 (16.0%)</td>
<td>45 (15.2%)</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>22 (11.6%)</td>
<td>276 (30.9%)</td>
<td>298 (27.5%)</td>
</tr>
<tr>
<td>Men</td>
<td>168 (88.4%)</td>
<td>618 (69.1%)</td>
<td>786 (72.5%)</td>
</tr>
<tr>
<td><strong>Work setting</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University hospital</td>
<td>27 (14.2%)</td>
<td>45 (5.0%)</td>
<td>72 (6.6%)</td>
</tr>
<tr>
<td>Cantonal hospital</td>
<td>39 (20.5%)</td>
<td>28 (3.1%)</td>
<td>67 (6.2%)</td>
</tr>
<tr>
<td>Regional / other hospital</td>
<td>50 (26.3%)</td>
<td>56 (6.3%)</td>
<td>106 (9.8%)</td>
</tr>
<tr>
<td>Private practice</td>
<td>74 (38.9%)</td>
<td>765 (85.6%)</td>
<td>839 (77.4%)</td>
</tr>
<tr>
<td><strong>Language</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Italian</td>
<td>3 (1.6%)</td>
<td>15 (1.7%)</td>
<td>18 (1.7%)</td>
</tr>
<tr>
<td>French</td>
<td>35 (18.4%)</td>
<td>166 (18.6%)</td>
<td>201 (18.6%)</td>
</tr>
<tr>
<td>German</td>
<td>152 (80.0%)</td>
<td>712 (79.7%)</td>
<td>864 (79.8%)</td>
</tr>
</tbody>
</table>
53.6 years [95% CI: 53.0–54.3], p <0.05; brothers: 48.4 [95% CI: 46.0–50.7] vs 52.4 years [95% CI: 50.9–53.8], p <0.05). There was no statistically significant difference by specialty regarding the frequency of SDM before testing PSA (95% in both groups).

Overall, family history was positive in 23% of the screened men. Participants with positive family history were younger at the time of self-screening than those with a negative family history (mean age: 50.4 vs 52.7 years; p <0.05). However, family members with a positive family history were not statistically significantly younger at the time of screening than those without (mean age of fathers: 59.6 vs 61.0 years, p = 0.40; brothers: 50.7 vs 51.8 years, p = 0.41; partners: 47.2 vs 53.6 years, p = 0.17).

Overall, PSA screening activity (screening of father, brother, partner or, if male, themselves) was statistically significantly higher in male physicians than in female physicians, irrespective of their specialty (63.3% vs 35.9%; p <0.05) and in urologists than in general internists, regardless of their sex (men: 77.4% vs 59.5%; p = 0.001; women: 81.8% vs 32.2%; p <0.05). PSA screening activity tended to be higher in older respondents. PSA screening was more frequently reported in the personal environment of urologists, compared to internists, across all age groups (figure 3).

Screening activity also differed according to the work setting of the participating physicians: physicians working at an academic centre were the least likely to have screened themselves or their fathers, brothers and partners (regional/other hospital 65.1%, private practice 55.8%, cantonal hospital 55.2%, academic centre 43.1%; p <0.05).

Compared to the general population of Switzerland, the survey underrepresents French-speaking (survey: 18.6% vs population: 22.1%) and Italian-speaking regions (survey: 1.7% vs population: 8.2%); thus, the German-speaking region is overrepresented in the survey (survey: 79.8% vs population: 62.0%) [11]. Between the language groups, the distribution of internists and urologists, as well as female and male respondents, was even (p = 0.25) and overall PSA screening activity did not differ (p = 0.64).

**Discussion**

Given the low specificity of the PSA test and the substantial morbidity associated with diagnostic workup and active treatment, PSA-based screening for early detection of prostate cancer remains a controversial topic [12–13]. Although technological advances decreased the morbidity of active treatment, functional disabilities after surgery or radiotherapy significantly reduce the quality of life of the affected patients [14–18]. However, recent data show a reduction in prostate cancer-specific mortality with PSA screening and suggest that the number needed to screen to avoid one cancer-specific death may be lower after longer follow-up [19–20]. Additionally, wider implementation of surveillance strategies instead of direct treatment is potentially mitigating the morbidity of active treatment regimens [19]. Therefore, in 2018 the recommendation against PSA screening was revoked by the USPSTF in favour of an individualised PSA screen based on SDM and in 2022 the EU started endorsing PSA screening in men up to the age of 70 years [7–8,21]. Accordingly, in Switzerland, the “smarter medicine” initiative of the SSGIM emphasises the importance of SDM before conducting a PSA screen, such that it is the well-informed patient who decides whether to undergo screening. Our study suggests that the majority of male physicians >50 years of age, regardless of their spe-
The most active subgroup in terms of recommending PSA screening to family members, female urologists were shown to be the least active group in recommending PSA screening to patients [26–27]. However, our results only partially support these findings. Although female internists has been shown that female physicians are more likely to recommend PSA screening, unlike colorectal or breast cancer screening, it is not endorsed by the Swiss Federal campaign to advocate PSA screening exist, although the morbidity of prostate biopsies and the treatment of prostate cancer but also with palliative prostate cancer care on a daily basis seem to favour screening for themselves and their relatives.

A first-degree family history for prostate cancer is known to increase the risk of prostate cancer significantly [28–29]. Therefore, the EAU recommends offering PSA screening to men with a positive family history at the early age of 45 years. While participants with a positive family history practised PSA self-screening at a younger age reflecting adherence to current guidelines, a possible family history did not lead to an earlier screening of relatives.

The altered 2012 recommendation of the US preventive services task force was implemented faster in the academic setting, where PSA screening was subsequently less often performed than in the non-academic setting [30–31]. Although the recommendation has since been revoked, in our study an academic work setting was still associated with lower personal PSA activity compared to physicians working in private practice or a non-academic hospital. This study has its limitations. First, it is unknown whether there is an association between the self-screening of physicians and screening of their patients in clinical practice. Furthermore, our survey was voluntary and might have led to a selection bias in favour of physicians interested and presumably more active in PSA screening, which may have resulted in higher screening rates. Finally, as in all surveys, our study results are based on self-reporting.

**Conclusion**

Twice as many physicians are screening themselves for prostate cancer compared to the Swiss male population. Furthermore, PSA screening activity in the personal environment is associated with the urology specialty and being a male physician. Urologists perform PSA screening at a younger age and more often for themselves and their family members than internists. Assuming that personal PSA screening behaviour is indicative of the disposition to offer PSA screening to men at risk of prostate cancer, the reason for these specialty- and sex-specific differences should be further examined.

**Data availability statement**

The data that support the findings of this study are available from the first author, TS, upon reasonable request.

**Acknowledgments**

Author contributions: ST, SK, WM, SR had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis. Concept and design: All authors.
Acquisition, analysis, or interpretation of data: All authors. Drafting of the manuscript: ST, SK, SR. Critical revision of the manuscript for important intellectual content: All authors. Statistical analysis: WM. Administrative, technical, or material support: SR. Supervision: SR.

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Potential competing interests
All authors have completed and submitted the International Committee of Medical Journal Editors form for disclosure of potential conflicts of interest. No potential conflict of interest related to the content of this manuscript was disclosed.

References
Appendix

Survey translated:

1. Dear Colleagues. This questionnaire is being distributed to all members of the Swiss Society of Urology (SSU) and the Swiss Society of General Internal Medicine (SSGIM). Could you kindly let us know which language you would like to use for the survey?

   o German
   o French
   o Italian

2. You are a member of

   o SSU
   o SSGIM

   If SSGIM member: 2.1 Did you finish the specialty of General Internal Medicine, and are you still working?

   o Yes
   o No

3. You are

   o female
   o male
4. How old are you?
   o (...) 

If male: 5. Have you ever performed a PSA screening on yourself, your father, brother, or partner? (Multiple answers possible)

   o No
   o Yes, myself at the age of ...
   o Yes, my father at the age of ...
   o Yes, my brother at the age of ...
   o Yes, my partner at the age of ...

If female: 5. Have you ever performed a PSA screening on your father, brother, or partner? (Multiple answers possible)

   o No
   o Yes, my father at the age of ...
   o Yes, my brother at the age of ...
   o Yes, my partner at the age of ...

If male 6: Was the family history (meaning son, brother, or father) at the time of screening positive? (multiple answers possible)

   o Myself
   o Father
   o Brother
   o Partner
If female 6: Was the family history (meaning son, brother, or father) at the time of screening positive? (Multiple answers possible)

- Father
- Brother
- Partner

7. Did you inform the screened about the potential risks before the screening?

- Yes
- No

8. Where do you work?

- University hospital
- Cantonal hospital
- Regional hospital
- Hospital of other categories
- Private practice
2. Survey in the Original languages:

German:

1. Geschätzte Kolleginnen und Kollegen


Gentili colleghi e colleghi Questo sondaggio è indirizzato a tutti i membri della Società Svizzera di Urologia e della Società Svizzera di Medicina Interna Generale. Vi ringraziamo fin da subito per il tempo dedicato a questo sondaggio. Fino ad oggi hanno partecipato x medici a questo questionario.

- Deutsch
- Français
- Italiano

2. Sie sind Mitglied der
o SGU
o SGAIM

If SGAIM member: 2.1 Sind Sie ein ordentliches Mitglied der SGAIM? Das bedeutet Sie besitzen den Facharztstitel für Allgemeine Innere Medizin und sind weiterhin arbeitstätig.

o Ja
o Nein

3. Sie sind

o weiblich
o männlich

4. Wie alt sind Sie?

o (...)

If male: 5. Haben Sie bei sich selbst, ihrem Vater, Bruder oder Partner einmal ein PSA-Screening empfohlen oder gar veranlasst? (Mehrere Antworten möglich)

o Nein
o Ja, bei mir selbst im Alter von ...

o Ja, bei meinem Vater. Im Alter von ...

o Ja, bei meinem Bruder. Im Alter von ...

o Ja, bei meinem Partner. Im Alter von ...
If female: 5. Haben Sie bei Ihrem Vater, Bruder oder Partner einmal ein PSA-Screening empfohlen oder gar veranlasst? (Mehrere Antworten möglich)

- Nein
- Ja, bei meinem Vater. Im Alter von ...
- Ja, bei meinem Bruder. Im Alter von ...
- Ja, bei meinem Partner. Im Alter von ...

If male 6: War die erstgradige Familienanamnese (d.h. Vater, Bruder oder Sohn sind betroffen) zum Zeitpunkt des PSA Screenings positiv fürs Prostatakarzinom? (Mehrfachauswahl möglich)

- Bei mir selbst
- Vater
- Bruder
- Partner

If female 6: War die erstgradige Familienanamnese (d.h. Vater, Bruder oder Sohn sind betroffen) zum Zeitpunkt des PSA Screenings positiv fürs Prostatakarzinom? (Mehrfachauswahl möglich)

- Vater
- Bruder
- Partner

7. Haben Sie den Betroffenen über die Risiken und den Nutzen des PSA-Screening aufgeklärt?

- Ja
- Nein
8. Wo arbeiten Sie?

- Universitätsspital
- Kantonsspital
- Regionalspital
- Spital anderer Kategorie
- Praxis
1. Geschätzte Kolleginnen und Kollegen Diese Umfrage ist an die Mitglieder der
Schweizerischen Gesellschaft für Urologie und Schweizerischen Gesellschaft für Allgemeine
Innere Medizin gerichtet. Wir danken Ihnen, dass Sie sich zwei Minuten Zeit für diese Umfrage
nehmen. Bisher haben bereits x Ärzte bei dieser Umfrage teilgenommen.

Chers-es collègues L'enquête que vous trouverez ci-dessous s'adresse aux membres de la
Société Suisse d’Urologie et de Médecine Interne Générale. Nous vous prions de prendre deux
minutes pour répondre aux questions. Merci. Jusqu’à présent, déjà x collègues ont participé au
sondage.

Gentili colleghi e colleghe Questo sondaggio è indirizzato a tutti i membri della Società Svizzera
di Urologia e della Società Svizzera di Medicina Interna Generale. Vi ringraziamo fin da
subito per il tempo dedicato a questo sondaggio. Fino ad oggi hanno partecipato x medici a
questo questionario.

- Deutsch
- Français
- Italiano

2. Vous êtes membre

- de la SSU
- de la SSMIG
If SSMIG member: 2.1 Êtes-vous membre ordinaire de la SSMIG? Cela signifie que vous détenez le titre de spécialiste en Médecine Interne Générale et que vous travaillez toujours.

- Oui
- Non

3. Vous êtes

- une femme
- un homme

4. Quel âge avez-vous?

- (...)

If male: 5. Avez-vous déjà recommandé ou organisé le dépistage du PSA pour vous-même, votre père, votre frère ou votre partenaire? (Choix multiple possible)

- Non
- Oui, pour moi, à l'âge de ... ans.
- Oui, pour mon père. À l'âge de ... ans.
- Oui, pour mon frère. À l'âge de ... ans.
- Oui, pour mon partenaire. À l'âge de ... ans.

If female: 5. Avez-vous déjà recommandé ou organisé le dépistage du PSA pour vous-même, votre père, votre frère ou votre partenaire? (Choix multiple possible)

- Non
- Oui, pour mon père. À l'âge de ... ans.
o Oui, pour mon frère. À l'âge de ... ans.

o Oui, pour mon partenaire. À l'âge de ... ans.

If male: 6. Au moment de ce dépistage du PSA, les antécédents familiaux* étaient-ils positifs? (Choix multiple possible) * Parent au premier degré = père, frère ou fils

o Pour vous-même

o Pour votre père

o Pour votre frère

o Pour votre partenaire

If female: 6. Au moment de ce dépistage du PSA, les antécédents familiaux* étaient-ils positifs? (Choix multiple possible) * Parent au premier degré = père, frère ou fils

o Pour votre père

o Pour votre frère

o Pour votre partenaire

7. Est-ce que la personne concernée a-t-elle été informée des risques et du bénéfice du dépistage PSA?

o Oui

o Non

8. Où travaillez-vous?

o Hôpital Universitaire

o Hôpital cantonal

o Hôpital régional
- Hôpital avec un nom different
- Cabinet privé


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- Deutsch
- Français
- Italiano

2. Lei è

- Membro della SSU
- Membro della SSGIM
If SSGIM member: 2.1 È un membro ordinario della SSGIM? * * Ha il titolo di specialista in Medicina Interna Generale e continua a lavorare.

- Sì
- No

3. Lei è

- Donna
- Uomo

4. Quanti anni ha?

- (…)

If male: 5. Ha mai raccomandato o organizzato lo screening del PSA per lei, suo padre, suo fratello o il suo partner? (Scelta multipla possibile)

- No
- Sì, per me, all'età di …
- Sì, per mio padre. All'età di … anni.
- Sì, per mio fratello. All'età di … anni.
- Sì, per il mio partner. All'età di … anni.

If female: 5. Ha mai raccomandato o organizzato lo screening del PSA per lei, suo padre, suo fratello o il suo partner? (Scelta multipla possibile)

- No
- Sì, per mio padre. All'età di … anni.
- Sì, per mio fratello. All'età di … anni.
- Sì, per il mio partner. All'età di … anni.
If male: 6. La storia familiare di cancro alla prostata era positiva al momento del test del PSA? (Scelta multipla possibile) * Parente di primo grado = padre, fratello o figlio

- Per lei
- Per suo padre
- Per suo fratello
- Per il suo partner

If female: 6. La storia familiare di cancro alla prostata era positiva al momento del test del PSA? (Scelta multipla possibile) * Parente di primo grado = padre, fratello o figlio

- Per suo padre
- Per suo fratello
- Per il suo partner

7. Ha informato la persona in questione dei rischi e benefici dello screening del PSA?

- Si
- No

8. Dove lavora?

- Ospedale Universitario
- Ospedale cantonale
- Ospedale regionale
- Ospedale con un nome diverso
- Studio privato