



The training paradox in oncosexuality: a multinational survey on clinician attitudes, barriers, and sexual health communication in geriatric prostate cancer care

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Abstract

Purpose Sexual dysfunction is common after prostate radiotherapy, yet communication barriers remain unclear. This multinational study assessed radiation oncologists' practices, attitudes, and sexual-health training.

Materials and methods The International Geriatric Radiotherapy Group (IGRG) disseminated a 38-item cross-sectional survey to radiation oncologists across 17 countries. The instrument captured demographics, discussion frequencies, perceived barriers, referral patterns, and attitudes toward oncosexuality. Data was analyzed with descriptive statistics, chi-square tests, and multivariable logistic regression. An exploratory sensitivity analysis restricted to respondents reporting regular management of patients receiving radiotherapy with potential impact on sexual health (≥ 1 such patient per month) was performed.

Results Among 117 radiation oncologists, 87% (102/117) reported some clinical exposure to patients receiving radiotherapy with potential impact on sexual health, and 57% (67/117) reported regular exposure (≥ 1 patient per month). 48% reported that patients rarely initiated discussions, and 8% never addressed the topic. Main barriers were time (39%), competing oncologic priorities (35%), and embarrassment (26%); 60% felt discomfort with older patients. Multivariable analysis revealed a "training paradox": clinicians with formal sexual-health training (56%) had significantly lower odds of initiating discussions at the first visit (OR 0.37, 95% CI 0.15–0.94, $p=0.037$) and higher odds of embarrassment with older patients (OR 5.72, 95% CI 2.09–15.65, $p=0.001$), independent of age, gender, experience, and practice setting.

Conclusion These findings suggest that awareness-focused sexual-health training alone may be insufficient; behaviourally anchored communication training and formal referral pathways are needed.

Keywords Psycho-oncology · Sexual health · Geriatric oncology · Prostate cancer · Medical education · Communication barriers · Survivorship

Introduction

The unprecedented prolongation of overall survival in prostate cancer, driven by advanced therapeutic modalities and earlier detection, has necessitated a profound shift toward comprehensive survivorship care. Prostate cancer exemplifies the delicate balance between oncological outcomes and

sexual function: treatments that extend survival frequently lead to erectile dysfunction, diminished libido, and compromised intimacy [1, 2].

Radiotherapy, a foundational pillar of curative-intent prostate cancer management, induces neurovascular and endothelial damage within the pelvic basin. Even with highly conformal techniques, dosimetric exposure to critical

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structures such as the internal pudendal arteries, the penile bulb, and the neurovascular bundles can lead to progressive arteriosclerosis and tissue fibrosis [3]. Up to 50% of patients experience acute erectile dysfunction during or shortly after treatment, with more than 85% of survivors reporting substantial functional impairment within a 15-year longitudinal period [4–6]. However, the impact of such treatment extends far beyond mere mechanical dysfunction. Sexual health encompasses a complex biopsychosocial matrix involving affectivity, identity, relational intimacy, and psychological equilibrium. Unaddressed sexual dysfunction is heavily correlated with psychological distress, clinical depression, loss of self-esteem, and severe relationship tension, effectively transforming a localized physical toxicity into a systemic psychological burden [7]. Despite this major impact on quality of life, sexual health remains a marginalised topic in oncology care. Although the concept of oncosexuality calls for the integration of sexual health into routine cancer management, systemic, cultural, and psychological barriers persist, and fewer than one third of patients report that clinicians initiate these discussions. Contrary to popular belief, interest in intimate relationships does not decrease with advancing age. Large national databases indicate that more than half of adults aged 65 to 74 remain sexually active, while nearly a quarter of individuals aged 75 to 85 continue to participate in sexual relations [8]. Older adults frequently report ongoing sexual difficulties, emphasising the need to address intimacy throughout the entire lifespan [9]. Sexual well-being is among the most consistently reported unmet survivorship needs of prostate cancer survivors [10]. Fewer than one third of older adults can recall ever having engaged in a discussion about sexuality with a healthcare provider [11]. Patients often lack awareness of how treatment may affect their sexual function [4], and clinicians attribute their avoidance of this topic to limited time, insufficient training, discomfort, and preconceived notions about age or culture [12–15]. While many patients would appreciate guidance on sexual matters, they perceive that their healthcare providers seldom create opportunities for such discussions [13].

The concept of oncosexuality has emerged precisely to underscore the integration of sexual health considerations into cancer care and to normalise these dialogues as integral components of survivorship [16, 17]. Cancer survivorship now extends from diagnosis through the remainder of life, encompassing the physical, psychosocial, and economic consequences of treatment [18]. There were approximately 16.9 million cancer survivors in the United States in 2019, a figure projected to reach 22.2 million by 2030 [19]. Men treated for prostate cancer constitute one of the largest groups of male survivors, and survivorship care must therefore address not only the risk of recurrence but also the

long-term sequelae of therapy, including sexual dysfunction, urinary incontinence and psychosocial distress.

While oncologists' reluctance to discuss sexual health is often attributed to time constraints, lack of training, and discomfort, the underlying cognitive and educational mechanisms remain underexplored. We hypothesise the existence of a "training paradox": didactic exposure that raises intellectual awareness of a complex issue without building practical communication skills may increase cognitive load, anticipatory anxiety, moral distress, and ultimately task avoidance. Radiation oncologists are uniquely placed in prostate cancer management, interacting with patients over prolonged daily treatment courses and longitudinal follow-up. Empirical data on their specific attitudes, structural barriers, and the actual efficacy of their prior psychosocial training in geriatric care remain remarkably scarce [20].

To address this gap, the IGRG conducted a multinational survey to evaluate practice patterns, identify the psychosocial and systemic barriers limiting communication, and explore the impact of formal sexual-health training on provider behaviour in geriatric prostate cancer survivorship.

Materials and methods

Study design and target population

A cross-sectional, descriptive multinational survey was conducted under the auspices of the IGRG. The IGRG is an established global consortium dedicated to optimising evidence-based care, expanding trial inclusion, and advancing supportive care protocols for older adults, minorities, and underserved populations in radiation oncology (<http://www.igr.org>). The target population comprised practising radiation oncologists actively involved in the therapeutic management of adult malignancies, with a specific focus on those treating genitourinary cancers.

Survey instrument and scope

The survey instrument was developed by a multidisciplinary panel of IGRG experts incorporating perspectives from radiation oncology, geriatric medicine, and psycho-oncology. The questionnaire consisted of 38 items hosted on a secure, anonymous online platform (Google Forms; supplementary data) and was disseminated via institutional email networks to 380 registered members of the IGRG Genitourinary working group in May 2025. Although the survey was disseminated to all members of the IGRG GU working group, prostate cancer is the dominant clinical focus of this group: 87% (102/117) of respondents reported some clinical exposure to patients receiving radiotherapy with potential impact

on sexual health, and 57% (67/117) reported regular exposure (defined as ≥ 1 such patient per month). We therefore frame our analyses and conclusions within prostate cancer survivorship practice. The questionnaire did not include a direct item asking respondents to designate their principal tumour-site of practice; we therefore approximate the prostate-cancer focus through reported clinical-exposure frequency. As an exploratory sensitivity analysis, we restricted the multivariable models to the 67 respondents reporting regular exposure (≥ 1 patient per month). The direction of the training estimates was broadly similar to that of the primary analysis, but confidence intervals widened and the training $\times$ outcome associations were no longer statistically significant, consistent with reduced precision in the smaller subset (Supplementary Table S1). The instrument did not capture whether respondents practised within institutions with formalised survivorship pathways, dedicated sexuality clinics, or specialist sex-health nurses, nor did it identify the prescriber of androgen-deprivation therapy.

The instrument captured four domains: (1) demographics and practice characteristics, including age, gender, years of experience, practice setting, and country; (2) patient engagement and communication timing, including the prevalence of treatment-related sexual dysfunction and the frequency and timing of patient- versus provider-initiated discussions; (3) psychosocial and systemic barriers, including time, clinical prioritisation, cultural context, patient age, and provider discomfort; and (4) training, attitudes, and management strategies, including prior sexual-health education, referral patterns, and perceived effectiveness of available interventions.

Ethical considerations and data privacy

This study was conducted in accordance with the ethical principles of the Declaration of Helsinki. The research consisted exclusively of a voluntary, fully anonymised survey of healthcare professionals with no patient participants, no patient-identifiable data, no biological specimens, and no clinical interventions. Under French law (Loi Jardé, n° 2012–300 of 5 March 2012 and its implementing decrees), such an investigation does not constitute « recherche impliquant la personne humaine » and falls outside the scope of mandatory review by an Institutional Review Board (IRB) or Comité de Protection des Personnes (CPP). No IRB approval, exemption number, or CPP submission was therefore required, in line with the policies of the participating institutions affiliated with the IGRG. All participants were informed of the study's objectives, the voluntary nature of their participation, and the complete anonymisation of all collected data; informed consent was implied by voluntary completion and submission of the online questionnaire.

Statistical analysis

Quantitative survey data were exported, cleaned, and analysed using R software (version 4.1.3). Descriptive statistics summarized demographic variables, communication practices, and perceived barriers; continuous variables were reported as medians with interquartile ranges and categorical variables as frequencies and percentages with separate columns for n and %. Associations between provider characteristics and communication outcomes were assessed using Pearson's chi-square test, with Fisher's exact test substituted when any expected cell count was less than five; in these cases, Fisher's exact p -values are reported and the use of Fisher's exact test is explicitly noted in the corresponding table footnote. Effect sizes were quantified using Cramer's V .

Multivariable logistic regression models evaluated two binary outcomes: routine discussion of sexual function at the initial visit and reported discomfort discussing sexuality with older patients. Predictor variables included provider age (<40 vs. ≥ 40), gender, years of experience (continuous), practice setting (private vs. academic/public), and prior sexual-health training. Variables with $p < 0.10$ in bivariate analysis were retained in the final models. Because missingness across analytical variables was low (6.8%, 8/117) and was judged compatible with a Missing Completely At Random pattern (Little's MCAR test, $p = 0.42$), the multivariable logistic regression models were conducted using complete cases for the included outcome and covariates; 109 respondents contributed to the primary adjusted models. Multiple imputation was therefore not pursued. Adjusted odds ratios (OR) with 95% confidence intervals (CI) are reported, with statistical significance defined as $p < 0.05$.

Results

Demographics and practice characteristics

The survey yielded 117 completed responses across 17 countries, representing a response rate of 30.8% (117/380). Respondents predominantly practised in the United States (34.2%), France (27.4%), Italy (12.0%) and the United Kingdom (6.8%); these four countries collectively accounted for approximately 80% of those who declared their country of practice, providing a distinctly Western lens on oncological care. Male clinicians comprised 67.5% of the sample. The most heavily represented age category was 30–39 years (32.5%), reflecting a substantial proportion of early- to mid-career physicians whose formative training occurred within the last decade. Most respondents (71.0%) practised in academic, university-affiliated, or large public hospital

Table 1 Participant demographics and practice characteristics (*N* = 117)

Characteristic	Category	<i>n</i>	%
Gender	Male	79	67.5
	Female	38	32.5
Age group (years)	<30	23	19.7
	30–39	38	32.5
	40–49	31	26.5
	50–59	18	15.4
	≥60	7	6.0
Years in practice	<2	20	17.1
	2–5	24	20.5
	5–10	32	27.4
	10–20	21	18.0
	>20	20	17.1
Institution type	University hospital	49	41.9
	Public hospital	34	29.1
	Private hospital	27	23.1
	Research institute	5	4.3
Country of practice (top)	United States	40	34.2
	France	32	27.4
	Italy	14	12.0
	United Kingdom	8	6.8
	Other (13 countries combined)	23	19.7

Table 2 Patient engagement and clinician communication patterns (*N* = 117)

Survey item	<i>n</i>	%
Patients raising sexual concerns: <20% of patients	48	41.0
Patients initiating discussion: rarely (0–20% of patients)	56	47.9
Clinician routinely addresses sexual health at first visit	63	53.8
Clinician never discusses sexuality during care	9	7.7
Clinician responds with empathy when patients express distress	46	39.3
Clinician redirects toward oncologic outcomes when patients express distress	41	35.0

settings; 23.1% practised in private institutions. Detailed demographics are presented in Table 1.

Clinical communication and patient engagement

87% (87%, 102/117) of respondents reported some clinical exposure to patients receiving radiotherapy with potential impact on sexual health, and 57% (67/117) reported regular exposure (≥1 such patient per month) predominantly men with localized or advanced prostate cancer at risk of radiotherapy-induced sexual dysfunction. Despite this exposure, communication on sexual health was limited: 41% indicated that fewer than 20% of patients raised sexual concerns, and 48% reported that patients rarely or never initiated these discussions, leaving the responsibility largely to clinicians. Only 54% of clinicians consistently addressed sexual health during the initial consultation, while 8% reported never discussing sexuality at any stage of care. When patients expressed distress about treatment-related sexual

Table 3 Perceived barriers to sexual-health communication (*N* = 117)

Reported barrier	<i>n</i>	%
Lack of consultation time	46	39.3
Lower priority than oncologic outcomes	41	35.0
Personal or professional embarrassment	30	25.6
Patient age perceived as a barrier	29	24.8
Discomfort discussing sexuality with older patients	70	59.8
Cultural background perceived to influence patient sexuality	104	88.9

Table 4 Referral practices and therapeutic preferences (*N* = 117)

Item	<i>n</i>	%
Ever referred patients for sexual issues (any frequency)	115	98.3
Refers to urologist	76	65.0
Refers to endocrinologist	42	35.9
Refers to psychologist or sex therapist	27	23.1
Considers psychological support very/quite important	103	88.0
Considers family/partner support very/quite important	98	83.8
Favoured intervention: PDE5 inhibitors	66	56.4
Favoured intervention: counselling	49	41.9
Favoured intervention: hormonal therapy	37	31.6
Favoured intervention: penile prosthesis	37	31.6

dysfunction, clinicians most often responded with empathy (39%), although 35% reported redirecting the conversation toward oncologic outcomes rather than psychosocial concerns (Table 2).

Identification of barriers and referral practices

Respondents reported multiple barriers limiting discussion of oncosexuality. The most commonly cited systemic barriers were lack of consultation time (39%) and the perception that sexual health is a lower priority than oncologic outcomes (35%). Provider-related psychosocial barriers were also frequent: 26% cited professional embarrassment, 25% avoided the topic because of patient age, and 60% reported discomfort when discussing sexual health with older patients (Table 3). Despite these communication gaps, 98% reported referring patients for sexual-health management, although referrals were largely biomedical most commonly to urologists (65%) and endocrinologists (36%) while referrals to psychologists or sex therapists were less frequent (23%). Pharmacological treatments such as PDE-5 inhibitors (56%) were favoured over psychological counselling (42%) or more comprehensive rehabilitative approaches (Table 4).

The training paradox: bivariate and multivariable analyses

Slightly more than half of respondents (56%) reported receiving formal training in sexual health in oncology. Younger physicians (<40 years) were significantly more

likely to have received such training ($\chi^2 = 8.63$, $df=1$, $p=0.003$), reflecting recent integration of survivorship education into medical curricula. Training was associated with the timing of discussions ($\chi^2 = 8.86$, $df=1$, $p=0.003$) but not with multidisciplinary referral practices (Fisher's exact, $p=1.000$) or with reduced reporting of embarrassment as a barrier ($\chi^2 = 0.19$, $df=1$, $p=0.665$). The complete bivariate panel including all χ^2 , df , and p -values, and effect sizes is reported in Table 5.

In multivariable logistic regression adjusting for age, gender, experience, and practice setting, prior training was paradoxically associated with lower odds of discussing sexuality at the initial visit (OR 0.37, 95% CI 0.15–0.94, $p=0.037$) and was the strongest independent predictor of psychological discomfort, with trained clinicians showing nearly six-fold higher odds of embarrassment when discussing sexuality with older patients (OR 5.72, 95% CI 2.09–15.65, $p=0.001$) (Table 6; Fig. 1). No other demographic or practice variables were independently significant.

Discussion

This multinational IGRG survey highlights a striking gap between radiation oncologists' recognition of sexual health as a key component of prostate cancer survivorship and its limited discussion in clinical practice. Crucially, the data are consistent with a "training paradox," in which prior sexual-health education was associated with greater reported discomfort and lower odds of first-visit discussion.

Patients rarely initiate discussions about sexual dysfunction, placing the responsibility on clinicians; however, consistent with comparable surveys, providers often fail to address this need. A 2024 study by Camejo et al. found that nearly one third of oncologists rarely or never discuss sexual health, citing lack of training, time constraints, and discomfort as key barriers. The WISH-BREAST survey, although focused on women treated for breast cancer, provides a useful comparator from adjacent survivorship literature, reporting that more than 70% of survivors never received sexual-health information from their care team [21, 22].

Our findings replicate similar systemic barriers in prostate cancer practice, with time pressure and competing oncologic priorities reinforcing a predominantly biomedical approach. Notably, 35% of radiation oncologists reported redirecting conversations toward disease prognosis when patients expressed distress about sexual dysfunction, potentially undermining the therapeutic alliance.

Avoidance of oncosociality is amplified in geriatric care. In this study, 25% of clinicians cited patient age as a barrier and 60% reported discomfort discussing sexual health with older adults, reflecting persistent ageist assumptions that

Table 5 Bivariate associations between clinician characteristics and outcomes (complete cases, $n=109$)

Comparison	χ^2 (df)	p -value	Cramer's V
Training received vs. Age<40 years	8.63 (1)	0.003	0.28
Training received vs. First-visit discussion	8.86 (1)	0.003	0.29
Training received vs. Referral practices*	—	1.000	<0.01
Training received vs. Embarrassment as barrier	0.19 (1)	0.665	0.04
Age<40 years vs. Embarrassment with elderly	1.05 (1)	0.307	0.10
Gender (female) vs. First-visit discussion	0.07 (1)	0.795	0.03
Practice setting (private vs. other) vs. First-visit discussion	0.14 (1)	0.704	0.04
Practice setting (private vs. other) vs. Embarrassment with elderly	0.07 (1)	0.790	0.03

Table 6 Multivariable logistic regression for the two pre-specified outcomes ($n=109$)

Outcome A. Routine discussion of sexuality at the first visit		
Predictor	Adjusted OR (95% CI)	p -value
Age<40 years (vs. ≥ 40)	1.15 (0.51–2.58)	0.734
Female (vs. Male)	0.89 (0.38–2.11)	0.795
Prior sexual-health training	0.37 (0.15–0.94)	0.037
Years of experience (continuous)	0.98 (0.94–1.02)	0.317
Private vs. Academic/Public setting	1.21 (0.45–3.22)	0.704
Outcome B. Embarrassment when discussing sexuality with older patients		
Predictor	Adjusted OR (95% CI)	p -value
Age<40 years (vs. ≥ 40)	1.45 (0.64–3.26)	0.370
Female (vs. Male)	0.72 (0.30–1.71)	0.459
Prior sexual-health training	5.72 (2.09–15.65)	0.001
Years of experience (continuous)	0.99 (0.95–1.03)	0.632
Private vs. Academic/Public setting	0.88 (0.34–2.26)	0.790

sexuality becomes irrelevant in later life. These findings are consistent with broader concerns that sexual-health discussions may be offered less consistently to older or palliative-care patients. This contradicts evidence that many older adults remain sexually active and experience significant distress from dysfunction [21].

The most striking and novel finding of this study is the inverse relationship between prior sexual-health training and effective clinical communication. Multivariable regression indicated that trained radiation oncologists were 63% less likely to initiate discussions during the first visit and nearly six times more likely to report embarrassment when discussing sexuality with older patients (Table 4). This counterintuitive result challenges the prevailing assumption that simply increasing didactic exposure will automatically

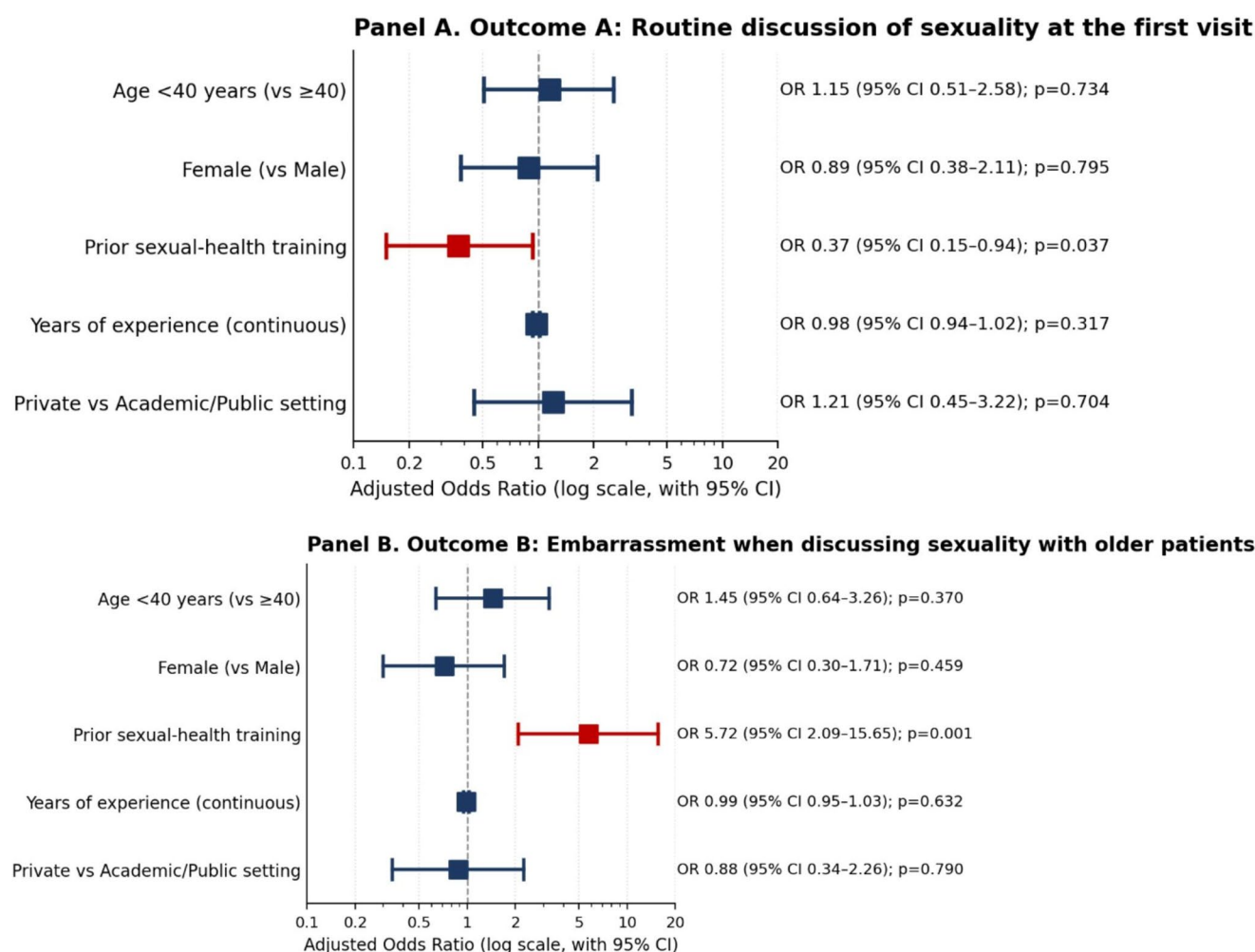


Fig. 1 Forest plots of the multivariable logistic regression for the two pre-specified outcomes ($n=109$)

improve patient care. Instead, it is consistent with a “sensitisation effect.” In medical education, this kind of paradox has been described in emotionally sensitive and high-acuity scenarios, where sensitisation to suffering without commensurate behavioural rehearsal can foster avoidance behaviours [23, 24].

Current sexual-health curricula in oncology are overwhelmingly didactic, focusing on physiological mechanisms of dysfunction including emerging dosimetric techniques for internal pudendal artery sparing in radiotherapy and algorithmic pharmacological management of erectile dysfunction. They critically fail to equip clinicians with the behavioural and psychosocial communication scripts required to navigate the profound emotional vulnerability inherent in these discussions. Consequently, clinicians may emerge from training with heightened awareness of patient suffering but without the practical communication skills needed to engage with it [25].

Trained clinicians acquire an acute, highly detailed awareness of the psychosocial ramifications of sexual

dysfunction but simultaneously recognise a lack of practical tools to adequately address them. The interpretive framework outlined here combining a Dunning-Kruger-style metacognitive shift, increased cognitive load, anticipatory anxiety, moral distress, and a freeze response is offered as a candidate explanatory model rather than a confirmed mechanism. Cross-sectional self-report data of the kind we have collected cannot adjudicate between these possibilities, nor distinguish them from alternative explanations (residual confounding, generational shifts, or differential social-desirability bias). Prospective qualitative designs (semi-structured interviews, focus groups, simulated-patient encounters) and longitudinal pre-/post-training studies are needed to test these hypotheses. This sensitisation may be compounded by limited referral networks. The heavy reliance on organ-specific specialists urologists and endocrinologists with minimal integration of psychologists or specialised sex therapists (23%) suggests that even when trained providers identify a psychosocial issue, they lack the interdisciplinary scaffolding

necessary to offload the clinical burden, fuelling embarrassment and avoidance.

An additional layer of complexity not directly captured by our survey is whether respondents practised within institutions with formalised sexual-health pathways, dedicated survivorship clinics, or sex-specialist nurses. In such settings, the minimum acceptable competency of the radiation oncologist may legitimately consist of identifying sexual concerns through brief targeted questioning and triggering a structured referral to a urology- or psycho-oncology-led sexuality team, rather than initiating biomedical or psychosexual management directly. Practice patterns are also conditioned by the discipline that prescribes androgen-deprivation therapy (ADT). In several healthcare systems, including most of the United States, ADT is initiated by the urologist, who is often considered the natural steward of the sexual sequelae; this division of labour may pragmatically lead some radiation oncologists to defer detailed sexual-health management to their urology colleagues. The same logic does not necessarily apply in European or Asian systems where ADT is more frequently prescribed within radiation oncology departments.

Recommendations for clinical practice

Based on these findings, seven recommendations can be made to improve sexual-health communication and care for patients with prostate cancer (Fig. 2). (1) Integrate structured, behaviourally anchored training that combines didactic content with simulation, role-play, and supervised clinical practice, with priority for early-career oncologists. (2) Normalise sexual-health discussions through structured signposting: at the initial consultation, the radiation oncologist should explicitly state that sexual health is a recognised, expected dimension of follow-up care and that it will be revisited systematically at each subsequent visit. Such verbal “contracted continuity” increases the likelihood of follow-through. (3) Allocate dedicated time within consultations or multidisciplinary care pathways so that sexual health is not deprioritised. (4) Provide resources and training on culturally competent communication. (5) Strengthen interdisciplinary referral pathways through a codified, single-entry protocol: each radiation oncology department should designate a named sexuality specialist (urological andrologist, sex therapist, or specialist nurse) to whom every patient with treatment-induced sexual dysfunction is referred. The radiation oncologist may simultaneously initiate a first-line intervention (e.g., a PDE5 inhibitor) when clinically appropriate, but the sexuality specialist remains responsible for triaging the patient towards the full range

of options, including penile rehabilitation, intracavernosal therapy, vacuum devices, prostheses, couple-based therapy, or dedicated psychosocial support, particularly in older patients in whom polypharmacy and cardiovascular comorbidity restrict pharmacological choices. (6) Tailor age-sensitive communication strategies and resources to reduce clinician discomfort and improve engagement with older populations. (7) Embed routine pre-visit patient-reported outcome (PRO) screening: validated instruments such as the EPIC-26 (sexual domain), IIEF-5/SHIM, and FACT-P should be administered electronically before the radiation oncology consultation. PRO-based screening relieves the clinician of having to broach the subject *de novo*, normalises sexual health as a tracked treatment outcome, and provides a quantitative anchor for subsequent follow-up discussion [26].

Limitations

Several limitations should be acknowledged. First, the 30.8% response rate introduces potential self-selection bias: respondents may have had greater interest or comfort with sexual health, meaning the true prevalence of avoidance could be higher. Second, although the survey spanned 17 countries, four predominantly Western nations (United States, France, Italy, United Kingdom) accounted for approximately 80% of respondents; the conclusions therefore primarily reflect Western healthcare systems and should be extrapolated with caution to South Asian, sub-Saharan African, Middle Eastern, and Latin American contexts, in which the cultural framing of sexuality, ageing, and the patient–physician relationship differs substantially. Third, the IGRG GU working group is dominated by, but not strictly limited to, prostate cancer practice. The questionnaire did not include a direct item on respondents’ principal tumour-site of practice; we therefore approximated this dimension through reported clinical-exposure frequency, and an exploratory sensitivity analysis restricted to the 67/117 (57.3%) respondents reporting regular management of patients receiving radiotherapy with potential impact on sexual health (≥ 1 patient per month) yielded multivariable estimates whose direction was broadly similar to that of the primary analysis, but with widened confidence intervals and a loss of statistical significance for the training $\times$ outcome associations, consistent with reduced precision in the smaller subset (Supplementary Table S1). The prostate-cancer framing of our conclusions therefore remains predominant rather than exclusive. Fourth, the instrument did not capture whether respondents practiced within institutions with formalised sexual-health pathways or specialist nurses, nor did it identify the prescriber of ADT; both

Fig. 2 IGRG seven-step framework for enhancing sexual-health communication and care in patients with prostate cancer. (1) Integrate structured, behaviourally anchored training combining didactic content with simulation, role-play and supervised practice; (2) normalise sexual-health discussions through structured signposting and “contracted continuity” at the initial consultation; (3) allocate dedicated time within consultations or multi-disciplinary care pathways; (4) provide resources and training on culturally competent communication; (5) strengthen interdisciplinary referral pathways through a codified, single-entry protocol routed to a named sexuality specialist; (6) tailor age-sensitive communication strategies to reduce clinician discomfort with older patients; (7) embed routine pre-visit patient-reported outcome (PRO) screening (EPIC-26, IIEF-5/SHIM, FACT-P) before the consultation



elements may modulate the observed barriers and referral patterns. Fifth, multivariable models were conducted using complete cases ($n = 109/117$), with overall missingness compatible with a Missing Completely At Random pattern (Little’s MCAR test, $p = 0.42$).

Sixth, the cognitive-mechanistic framework proposed for the training paradox (sensitisation, cognitive load, freeze response) is hypothesis-generating and requires confirmation through prospective qualitative or longitudinal pre-/post-training designs. Finally, self-reported data are subject to social-desirability bias, and patient-reported outcomes were not collected. Future research should incorporate patient-reported outcomes,

observational analyses of clinical interactions, and partner-inclusive studies.

Conclusion

Sexual health remains underaddressed in geriatric prostate cancer survivorship due to time constraints, age-related bias, and provider discomfort. This multinational survey found prior didactic sexual-health training was associated with less first-visit discussion and greater discomfort with older patients, highlighting the need

for age-sensitive communication training, pre-visit PRO screening, and formal interdisciplinary referral pathways.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s00345-026-06619-3>.

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Data availability Data supporting the findings of this study are available from the corresponding author upon reasonable request.

Declarations

Conflict of interest The authors declare no competing interests.

Ethical approval This study consisted exclusively of a voluntary, anonymous multinational survey of healthcare professionals with no patient participants. Under French law (Loi Jardé, n° 2012–300), such a study does not constitute research involving the human person and is therefore not subject to mandatory IRB / CPP review. See Methods section for ethical considerations and data privacy for details.

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