

PRIMENA KASRP UPITNIKA U PROCENI ZNANJA I STAVOVA MEDICINSKIH SESTARA O BOLU: PRELIMINARNI REZULTATI

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ORIGINAL ARTICLE

USING THE KASRP QUESTIONNAIRE TO ASSESS NURSES' KNOWLEDGE AND ATTITUDES REGARDING PAIN: PRELIMINARY RESULTS

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SAŽETAK

Uvod/Cilj: Bol je neprijatno senzorno i emocionalno iskustvo povezano sa stvarnim ili potencijalnim oštećenjem tkiva. U sestrinskoj praksi bol se definiše kao „ono što osoba koja ga doživljava kaže da jeste i postoji kada god osoba kaže da postoji”. Cilj našeg istraživanja je bio da se izvrši procena primenljivosti upitnika – *Anketa o znanju i stavovima o bolu* (engl. *Knowledge and Attitudes Survey Regarding Pain – KASRP*), i prikažu preliminarni rezultati procene znanja i stavova medicinskih sestara – tehničara o bolu u odnosu na starost, godine radnog iskustva, stepen obrazovanja i organizacionu jedinicu u kojoj rade.

Materijali i metode: Istraživanje je sprovedeno kao studija preseka tokom novembra i decembra 2022. godine. Uzorak su činile medicinske sestre – tehničari zaposleni na Institutu za onkologiju Vojvodine. Podaci su prikupljeni pomoću *KASRP* upitnika. Ovaj upitnik sadrži 42 pitanja koja se odnose na sociodemografske karakteristike, kao i na znanje i stavove o bolu.

Rezultati: *KASRP* upitnik se pokazao primenljivim u ispitivanoj populaciji. Medicinske sestre – tehničari su pokazali prosečan nivo znanja i neutralan stav prema bolu (52,42%). Slabo znanje i negativan stav uočeni su u domenima bola povezanog sa malignim oboljenjima i procene bola, dok je u domenu farmakološkog lečenja zabeležen prosečan nivo znanja i neutralan stav, a u domenu zloupotrebe supstanci dobro znanje i pozitivan stav. Nije utvrđena statistički značajna povezanost skorova sa starošću, godinama radnog iskustva i stepenom obrazovanja, dok je značajna razlika uočena u odnosu na organizacionu jedinicu u kojoj su ispitanici zaposleni.

Zaključak: Dobijeni nalazi predstavljaju preliminarne rezultate primene *KASRP* upitnika i mogu da posluže kao osnova za dalja istraživanja i psihometrijsku evaluaciju srpske verzije upitnika.

Ključne reči: bol, stavovi, medicinske sestre – tehničari, ankete, upitnici

ABSTRACT

Introduction/Objective: Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage. In nursing practice, pain is defined as “whatever the experiencing person says it is, existing whenever the person says it does”. This study aimed to assess the feasibility of applying the *Knowledge and Attitudes Survey Regarding Pain (KASRP)* questionnaire and to present preliminary results on nurses' knowledge and attitudes regarding pain, in relation to age, years of work experience, education level, and organizational unit of employment.

Materials and methods: This cross-sectional study was conducted in November and December 2022 among the nurses employed at the Institute of Oncology of Vojvodina. Data were collected using the *KASRP* questionnaire, consisting of 42 items assessing sociodemographic characteristics, knowledge, and attitudes regarding pain.

Results: The *KASRP* questionnaire proved feasible in the study population. Nurses demonstrated an average level of knowledge and neutral attitudes toward pain (52.42%). Poor knowledge and negative attitudes were observed in the domains of cancer-related pain and pain assessment; average knowledge was registered in the area of pharmacological management, while good knowledge was noted regarding substance abuse. *KASRP* scores were not significantly associated with age, years of work experience, or education level. However, they differed significantly in relation to the organizational unit of employment.

Conclusion: The findings represent preliminary results obtained using the *KASRP* questionnaire and may serve as a basis for further research and psychometric evaluation of its Serbian version.

Keywords: pain, attitudes, nurses, surveys, questionnaires

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UVOD

U zdravstvenoj zaštiti, jednu od najšire prihvaćenih definicija bola dala je Margo McCaffery: „Bol je sve ono što osoba koja ga doživljava kaže da jeste i postoji kad god osoba kaže da postoji“ [1]. Revidirana definicija bola – „neprijatno senzorno i emocionalno iskustvo povezano sa stvarnim ili potencijalnim oštećenjem tkiva, ili nalik iskustvu povezanom sa takvim oštećenjem“ – jednoglasno je usvojena od strane Saveta Međunarodnog udruženja za proučavanje bola (engl. *International Association for the Study of Pain – IASP*) početkom 2020. godine [2].

Približno 20% odraslih osoba u Evropi, odnosno oko 150 miliona ljudi, pati od umerenog do jakog hroničnog bola [3]. Kod pacijenata sa malignim bolestima, bol je prisutan u približno 30%–40% slučajeva u trenutku postavljanja dijagnoze, dok u uznapredovalim stadijumima oko 70%–80% onkoloških pacijenata oseća bol. Prema procenama SZO, približno 17 miliona ljudi širom sveta boluje od malignih bolesti, od kojih 12–13 miliona ima hronični bol povezan sa karcinomom. Od 1995. godine na ovamo, hronični bol se dovodi u vezu sa fizičkim i psihološkim posledicama, povećanim izdacima za zdravstvenu zaštitu, smanjenom produktivnošću i prevremenim penzionisanjem [4]. Jak bol takođe pogađa članove porodice pacijenata i druge osobe iz njihovog okruženja, što dodatno ukazuje na značaj ublažavanja bola kao ključnog izazova savremene medicine [3].

Pored primene neopiodnih i opioidnih analgetika, od ključnog značaja je odgovarajuća procena bola. Ona podrazumeva uzimanje detaljne anamneze, sa posebnim osvrtnom na lokalizaciju, raspodelu, intenzitet, kvalitet i vremenske karakteristike bola, kao i na faktore koji izazivaju ili pogoršavaju bol, uz pažljivo slušanje pacijenta [3,5]. Pored uzimanja anamneze, neophodni su i fizički pregled, dodatne procene i dijagnostičke procedure, kao i prepoznavanje i razlikovanje nociceptivnog i ne-nociceptivnog bola. Opšteprihvaćeni model podrazumeva prepoznavanje, procenu i lečenje (engl. *recognize, assess, and treat – RAT*) bola [3].

Bol predstavlja klinički problem koji zahteva saradnju lekara i medicinskih sestara – tehničara. Obrazovanje medicinskih sestara – tehničara omogućava im da samostalno procenjuju intenzitet bola i doprinesu poboljšanju komfora pacijenta i njegovog subjektivnog blagostanja. Kroz odnos zasnovan na poverenju, razumevanju i empatiji, medicinske sestre – tehničari obavljaju razgovore sa pacijentima, posmatraju ih, sprovedu procenu fizičkog stanja i prikupljaju podatke o prisustvu, intenzitetu, lokalizaciji, nastanku, širenju i kvalitetu bola. Intenzitet bola određuje hitnost intervencije, dozu farmakološke terapije i put primene leka [6].

Jedna studija iz Omana ispitala je faktore povezane sa postupcima medicinskih sestara u kontekstu

INTRODUCTION

In healthcare, one of the most widely accepted definitions of pain was given by Margo McCaffery: “Pain is whatever the experiencing person says it is, and it exists whenever the person says it does” [1]. The revised definition of pain – “an unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage” – was unanimously adopted by the International Association for the Study of Pain (IASP) Council in early 2020 [2].

Approximately 20% of adults in Europe, or around 150 million people, are affected by moderate to severe chronic pain [3]. In patients with malignant disease, pain is present in approximately 30%–40% of cases at the time of diagnosis, while in the advanced stages, about 70%–80% of oncology patients experience pain. According to WHO estimates, approximately 17 million people worldwide suffer from malignant diseases, of whom 12–13 million experience chronic cancer pain. Since 1995, chronic pain has been associated with physical and psychological consequences, increased healthcare expenditures, reduced productivity, and early retirement [4]. Severe pain also affects patients’ family members and others in their environment, further highlighting pain management as a key challenge in modern medicine [3].

In addition to non-opioid and opioid analgesic treatment, appropriate pain assessment is essential. This includes taking a detailed medical history, with particular attention to pain localization, distribution, intensity, quality, temporal characteristics, and factors that trigger or aggravate pain, together with careful listening to the patient [3,5]. Alongside history taking, physical examination, additional assessments, and diagnostic procedures are required, as well as the identification and differentiation of nociceptive and non-nociceptive pain. The generally accepted model is to recognize, assess, and treat (RAT) pain [3].

Pain is a collaborative clinical problem addressed by physicians and nurses. Nursing education enables nurses to independently assess pain intensity and contribute to improving patient comfort and subjective well-being. Through a relationship based on trust, understanding, and empathy, nurses conduct interviews, observe patients, perform physical assessments, and collect data on the presence, intensity, localization, onset, spread, and quality of pain. Pain intensity determines the urgency of intervention, the dose of pharmacological therapy, and the route of drug administration [6].

A study from Oman examined factors related to nurses’ pain management practices and emphasized the role of knowledge and attitudes within the *Knowledge and Attitudes Survey Regarding Pain (KASRP)*

ublažavanja bola i istakla ulogu znanja i stavova unutar okvira *Ankete o znanju i stavovima o bolu* (engl. *Knowledge and Attitudes Survey Regarding Pain – KASRP*). Nalazi ove studije ukazuju na to da adekvatno znanje i odgovarajući stavovi omogućavaju medicinskim sestrama – tehničarima da efikasno tretiraju bol [7].

Naša studija se fokusira na znanje i stavove u vezi sa bolom među medicinskim sestrama – tehničarima zaposlenim u onkološkoj zdravstvenoj zaštiti, uz ispitivanje razlika u odnosu na starosno doba, godine radnog iskustva, stepen obrazovanja i organizacionu jedinicu u kojoj su učesnici studije zaposleni.

MATERIJALI I METODE

Etički odbor Instituta za onkologiju Vojvodine (br. 4/21/2-3993/2-6) i Etički odbor Medicinskog fakulteta Univerziteta u Novom Sadu (br. 01-39/165/2) dali su etičko odobrenje za sprovođenje istraživanja. Istraživanje je sprovedeno u Institutu za onkologiju Vojvodine.

Ova studija preseka sprovedena je tokom novembra i decembra 2022. godine. U istraživanje su bile uključene medicinske sestre – tehničari zaposleni na Institutu za onkologiju Vojvodine, i to u sledećim organizacionim jedinicama: Klinika za hiruršku onkologiju ($n = 29$), Klinika za internističku onkologiju ($n = 25$), Klinika za radioterapiju ($n = 25$) i Služba za anesteziju sa reanimatologijom ($n = 25$). Medicinske sestre – tehničari su dobrovoljno i anonimno učestvovali u istraživanju, nakon potpisivanja formulara o saglasnosti. Svim učesnicima je uručen osnovni istraživački instrument – KASRP upitnik, u papirnoj formi, koji su samostalno popunjavali 30 minuta pre ili nakon završetka smene.

KASRP upitnik je korišćen uz dozvolu njegove autorke, Beti Ferel. Sadržaj upitnika razvili su Svetska zdravstvena organizacija i Američko društvo za bol (engl. *American Pain Society – APS*), uz oslanjanje na Smernice za lečenje bola Nacionalne sveobuhvatne mreže za rak (engl. *National Comprehensive Cancer Network Pain Guidelines*). Upitnik je potvrđen kao validan i primenjen u brojnim međunarodnim istraživanjima [8,9]. U prethodnim istraživanjima utvrđena je zadovoljavajuća interna konzistentnost instrumenta, sa vrednostima Kronsbaahovog alfa koeficijenta većim od 0,70 [10,11]. Sadržaj upitnika zasnovan je na međunarodno prihvaćenim smernicama za lečenje bola. Za potrebe ove studije, upitnik je preveden sa engleskog na srpski jezik i lingvistički prilagođen lokalnom kliničkom okruženju, kako bi se poboljšale jasnoća i primenljivost za učesnike. Formalna psihometrijska validacija srpske verzije nije sprovedena pre njene primene. Shodno tome, ova studija predstavlja preliminarne nalaze o primeni srpske verzije KASRP upitnika u ispitivanoj populaciji.

Bodovani segment upitnika sastojao se od 38 pitanja, uključujući 22 pitanja po tipu tačno/netačno, 14

framework. Its findings suggest that adequate knowledge and appropriate attitudes enable nurses to effectively manage pain [7].

The present study focuses on pain-related knowledge and attitudes among nurses working in oncology care and examines differences by age, work experience, education level, and department.

MATERIALS AND METHODS

The Ethics Committee of the Institute of Oncology of Vojvodina (No. 4/21/2-3993/2-6) and the Ethics Committee of the University of Novi Sad Faculty of Medicine (No. 01-39/165/2) granted ethical approval for the study. The study was performed at the Institute of Oncology of Vojvodina.

This cross-sectional study was carried out in November and December 2022. The study included nurses of both genders employed at the Institute of Oncology of Vojvodina, in the following organizational units: Clinic for Surgical Oncology ($n = 29$), Clinic for Medical Oncology ($n = 25$), Clinic for Radiotherapy ($n = 25$), and the Department of Anesthesiology with Resuscitation ($n = 25$). Nurses participated voluntarily and anonymously after signing the consent form. All participants were given the primary research instrument – the KASRP questionnaire, in paper form, which they completed independently, 30 minutes before or after the end of their shift.

The KASRP questionnaire was used with the permission of its author, Betty Ferrell. The content of the questionnaire was developed by the World Health Organization and the American Pain Society (APS), and informed by the National Comprehensive Cancer Network Pain Guidelines. The questionnaire has been validated and applied in numerous international studies [8,9]. Previous studies reported satisfactory internal consistency of the instrument, with Cronbach's alpha values above 0.70 [10,11]. The content of the questionnaire is based on internationally accepted pain management guidelines. For the purpose of this study, the questionnaire was translated from English into Serbian and linguistically adapted to the local clinical setting, in order to improve clarity and applicability for the participants. Formal psychometric validation of the Serbian version was not performed prior to its use. Accordingly, this study presents preliminary findings on the use of the Serbian version of the KASRP questionnaire in the study population.

The scored segment of the questionnaire consisted of 38 items, including 22 true/false items, 14 multiple-choice items, and two case-based questions. In addition to the 38 scored KASRP items, participants answered four additional questions related to so-

pitanja sa višestrukim izborom i dva pitanja zasnovana na prikazu slučaja. Pored 38 bodovanih KASRP pitanja, učesnici su odgovarali i na četiri dodatna pitanja koja su se odnosila na sociodemografske karakteristike, kako je opisano u nastavku. Ukupan skor izračunat je na osnovu 38 pitanja. Pitanja su bila koncipirana tako da se tačni odgovori zaokruže ili označe znakom „X“, tamo gde je to bilo naznačeno. Svaki tačan odgovor bodovan je jednim poenom, dok su netačni odgovori bodovani sa nula poena. Maksimalni mogući skor iznosio je 38 poena (100% tačnih odgovora), dok je minimalni mogući skor iznosio 0 poena. Budući da su autori KASRP upitnika naveli da pitanja koja se odnose na znanje i stavove prema bolu ne treba analizirati odvojeno, analiziran je ukupan procenat tačnih odgovora na KASRP upitniku. Procenat tačnih odgovora kategorisan je u tri grupe:

1. < 50% tačnih odgovora – nedovoljno znanje i negativan stav prema bolu
2. 50%–80% tačnih odgovora – prosečno znanje i neutralan stav prema bolu
3. ≥ 80% tačnih odgovora – dobro znanje i pozitivan stav prema bolu.

Navedenu kategorizaciju definisali su autori ove studije u svrhu interpretacije rezultata, dok je prag od ≥ 80% u skladu sa prethodnim istraživanjima koja ovaj nivo smatraju pokazateljem zadovoljavajućeg nivoa znanja i stavova [12,13].

Budući da su pitanja KASRP upitnika grupisana u četiri domena, odgovori medicinskih sestara – tehničara analizirani su i u odnosu na pojedinačne domene:

1. Pitanja o bolu povezanim sa karcinomom
 2. Pitanja o proceni bola
 3. Pitanja o farmakološkom lečenju bola
 4. Pitanja o zloupotrebi supstanci/fizičkoj zavisnosti
- Domen 1 obuhvatio je pitanja: 9, 27, 29, 32, 34.
Domen 2 obuhvatio je pitanja: 5, 6, 7, 8, 16, 35, 36, 41a i 42a.
Domen 3 obuhvatio je pitanja: 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 25, 28, 30, 31, 33, 38, 39, 40, 41b i 42b.
Domen 4 obuhvatio je pitanja: 24, 26, 37.

Za potrebe ove studije bilo je potrebno odgovoriti i na četiri dodatna pitanja koja su se odnosila na sociodemografske podatke (starost, godine radnog iskustva, stepen obrazovanja i organizaciona jedinica u kojoj su ispitanici zaposleni). Stepen obrazovanja medicinskih sestara – tehničara uključenih u istraživanje grupisan je u dve kategorije (srednje/više obrazovanje) za potrebe statističke analize. Medicinske sestre – tehničari sa diplomom srednje medicinske škole svrstani su u grupu sa srednjim obrazovanjem, dok su oni sa osnovnim strukovnim, osnovnim akademskim ili master akademskim stepenom obrazovanja iz oblasti zdravstvene nege svrstani u grupu sa višim stepenom obrazovanja.

ciodemographic characteristics, as described below. The overall score was generated from 38 questions. Questions were structured so that correct answers could be circled or marked with an “X”, where indicated. Each correct response was assigned one point, whereas incorrect responses were scored as zero. The maximum possible score was 38 points (100% correct answers), while the minimum possible score was 0 points. Since the authors of the KASRP questionnaire indicated that questions related to knowledge and attitudes toward pain should not be analyzed separately, we analyzed the overall percentage of correct answers in the KASRP questionnaire. The percentage of correct answers was categorized into three groups:

- 1) < 50% correct answers – poor knowledge and negative attitude toward pain
- 2) 50%–80% correct answers – average knowledge and neutral attitude toward pain
- 3) ≥ 80% correct answers – good knowledge and positive attitude toward pain.

This categorization was defined by the authors of the present study for interpretative purposes, while the ≥ 80% threshold is consistent with previous studies that consider this level to indicate satisfactory knowledge and attitudes [12,13].

As the KASRP questions were grouped into four domains, the nurses' responses were also analyzed by each domain:

- 1) Questions about cancer-related pain
- 2) Questions on pain assessment
- 3) Questions on pharmacological management
- 4) Questions on substance abuse/physical addiction

Domain 1 included questions: 9, 27, 29, 32, 34.

Domain 2 included questions: 5, 6, 7, 8, 16, 35, 36, 41a, and 42a.

Domain 3 included questions: 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 25, 28, 30, 31, 33, 38, 39, 40, 41b, 42b.

Domain 4 included questions: 24, 26, 37.

For the purpose of this study, it was also necessary to answer four additional questions related to sociodemographic data (age, years of work experience, level of education, and organizational unit of employment). For the purpose of statistical analysis, the education level of the nurses who participated in the study was grouped into two categories (secondary/higher education). Nurses with a medical high school diploma were classified into the secondary education group, while those with basic vocational (associate degree), undergraduate academic (Bachelor of Science), or master's academic degrees in nursing were classified into the higher education group.

Odgovori (upitnici) koji nisu bili adekvatno popunjeni isključeni su iz uzorka istraživanja. Od ukupno 120 (100,0%) distribuiranih upitnika, 104 (86,7%) upitnika su bila adekvatno popunjena, zbog čega su rezultati istraživanja prikazani na osnovu analize 104 upitnika (100,0%). Primenljivost upitnika je procenjena na osnovu udela adekvatno popunjenih upitnika.

Statistička obrada podataka sprovedena je u programu SPSS, verzija 21. Kvantitativni podaci prikazani su kao aritmetička sredina $\pm$ standardna devijacija, dok su kvalitativni podaci izraženi kao frekvencije i procenti. Razlike između grupa u pogledu kontinuiranih ishoda ispitane su primenom t-testa ili jednofaktorskom analizom varijanse (ANOVA). Kada je rezultat ANOVA testa bio statistički značajan, primenjena je Bonferroni-jeva post hoc analiza radi utvrđivanja razlika između pojedinačnih parova grupa. Kategorijalne varijable poređene su primenom hi-kvadrat testa. Statistička značajnost definisana je kao $p < 0,05$. Rezultati su prikazani tabelarno i grafički.

REZULTATI

Od ukupno 120 distribuiranih KASRP upitnika, 104 (86,7%) je bilo adekvatno popunjeno i stoga su ovi upitnici uključeni u analizu. Analiza je zasnovana na odgovorima 104 medicinskih sestara – tehničara zaposlenih u Institutu za onkologiju Vojvodine. Većina (63,4%) ispitanika je bila starosti od 26 do 45 godina, dok je 13,5% njih bilo mlađe od 26 godina, a 23,1% starije od 46 godina. U pogledu radnog iskustva, 23,1% ispitanika je imalo manje od šest godina radnog iskustva, 19,2% između šest i deset godina, 20,2% između jedanaest i petnaest godina, dok je 37,5% imalo više od šesnaest godina radnog iskustva. U pogledu obrazovanja, većina (86,5%) učesnika je imala diplomu srednje medicinske škole, 3,8% je imalo završene osnovne strukovne studije, 8,7% osnovne akademske studije, dok je 1% imalo master akademski stepen iz oblasti zdravstvene nege.

U pogledu organizacione jedinice, najveći broj učesnika je radio na Klinici za hiruršku onkologiju (27,9%; $n = 29$); isti broj medicinskih sestara – tehničara je radio na Klinici za internističku onkologiju (24,0%; $n = 25$), Klinici za radioterapiju (24,0%; $n = 25$) i u Službi za anesteziju sa reanimatologijom (24,0%; $n = 25$) (Tabela 1).

Nijedan učesnik nije pokazao dobro znanje i pozitivan stav prema bolu. Većina (67,3%) medicinskih sestara – tehničara je imala prosečno znanje i neutralan stav, dok je 32,7% imalo nedovoljno znanje i negativan stav (Grafikon 1).

Ukupan KASRP skor je ukazao na prosečan nivo znanja i neutralan stav prema bolu (52,43%). Analiza prema domenima pokazala je nedovoljno znanje i negativne stavove u oblastima bola povezanog sa karci-

Responses (questionnaires) that were inadequately completed were excluded from the study sample. Out of a total of 120 (100.0%) questionnaires distributed, 104 (86.7%) questionnaires were appropriately completed, which is why the study results are presented based on the analysis of 104 questionnaires (100.0%). The feasibility of questionnaire application was assessed based on the proportion of adequately completed questionnaires.

Statistical processing was carried out in SPSS, Version 21. Quantitative data were summarized using mean values, standard deviations, while qualitative data were expressed as counts and percentages. Group differences in continuous outcomes were examined with t-test or one-way ANOVA. When the ANOVA result was statistically significant, Bonferroni post hoc analysis was applied to identify pairwise differences between groups. Categorical variables were compared using the chi-square test. Statistical significance was defined as $p < 0.05$. Results are presented in tables and graphs.

RESULTS

Of the 120 KASRP questionnaires distributed, 104 (86.7%) were completed appropriately and, therefore, included in the analysis. The analysis was based on responses from 104 nurses employed at the Institute of Oncology of Vojvodina. The majority of respondents were between 26 and 45 years of age (63.4%), while 13.5% were younger than 26 years and 23.1% were older than 46 years. Regarding work experience, 23.1% of nurses had less than six years of experience, 19.2% had between six and ten years of experience, 20.2% had between eleven and fifteen years, while 37.5% had more than sixteen years of professional experience. In terms of education, most participants (86.5%) had a medical high school diploma, 3.8% had a basic vocational degree, 8.7% had an undergraduate academic degree, while 1% held a master's degree in health care.

Regarding the organizational unit, the largest number of participants worked at the Clinic for Surgical Oncology (27.9%; $n = 29$); the same number of nurses worked at the Clinic for Medical Oncology (24.0%; $n = 25$), the Clinic for Radiotherapy (24.0%; $n = 25$), and the Department of Anesthesiology with Resuscitation (24.0%; $n = 25$) (Table 1).

No participants demonstrated good knowledge and a positive attitude toward pain. The majority of nurses (67.3%) had average knowledge and a neutral attitude, while 32.7% had poor knowledge and a negative attitude (Graph 1).

Tabela 1. Sociodemografske karakteristike ispitanika

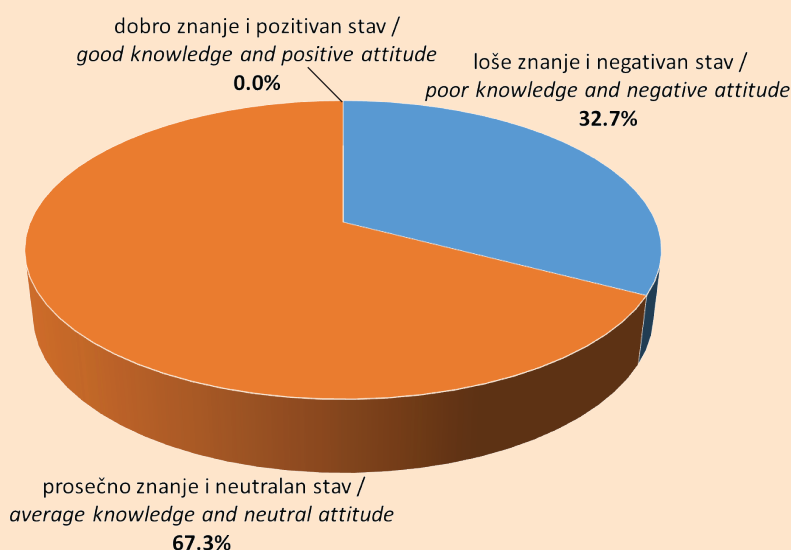
Pitanje / Question		N	%
Starost / Age	< 26	14	13.5%
	26–35	33	31.7%
	36–45	33	31.7%
	> 46	24	23.1%
Godine radnog iskustva / Years of work experience	< 6	24	23.1%
	6–10	20	19.2%
	11–15	21	20.2%
	> 16	39	37.5%
Stepen obrazovanja / Level of education	Srednja medicinska škola / Medical high school diploma	90	86.5%
	Osnovne strukovne studije / Basic vocational degree (Associate Degree in Nursing)	4	3.8%
	Osnovne akademske studije / Undergraduate academic degree (Bachelor of Science in Nursing)	9	8.7%
	Master akademske studije zdravstvene nege / Master's degree in health care/nursing	1	1.0%
Organizaciona jedinica / Department	Hirurška onkologija / Surgical Oncology	29	27.9%
	Internistička onkologija / Medical Oncology	25	24.0%
	Radioterapija / Radiotherapy	25	24.0%
	Služba anestezije / Anesthesiology and Resuscitation Department	25	24.0%

Table 1. Sociodemographic characteristics of the study participants

nomom (48,07%) i procene bola (39,30%). U domenu farmakološkog lečenja (55,56%), medicinske sestre – tehničari su pokazali prosečan nivo znanja i neutralne stavove, dok su dobro znanje i pozitivni stavovi uočeni u domenu zloupotrebe supstanci (80,13%).

Analiza odgovora na pitanja zasnovanih na prikazu slučaja (41a–42a) pokazala je teškoće u proceni bola u konkretnim kliničkim situacijama. U prvom prikazu slučaja (pitanje 41a), 91,3% medicinskih sestara netačno je procenilo intenzitet bola, dok je samo 8,7%

The overall KASRP score indicated an average level of knowledge and a neutral attitude toward pain (52.43%). Domain-specific analysis showed poor knowledge and negative attitudes in the areas of cancer-related pain (48.07%) and pain assessment (39.30%). In the pharmacological management domain (55.56%), nurses demonstrated an average level of knowledge and neutral attitudes, whereas good knowledge and positive attitudes were observed in the substance abuse domain (80.13%).



Grafikon 1. Znanje i stavovi medicinskih sestara – tehničara o bolu

Graph 1. Knowledge and attitudes of nurses about pain

Tabela 2. Razlike u tačnosti odgovora iz KASRP upitnika po organizacionim jedinicama

Pitanje / Question	Hirurška onkologija / Surgical Oncology n (%)	Internistička onkologija / Medical Oncology n (%)	Radioterapija / Radiotherapy n (%)	Anestezija sa reanimacijom / Anesthesia and Resuscitation n (%)	p
Vitalni znaci i intenzitet bola / Vital signs and pain intensity	11 (37.9%)	19 (76.0%)	15 (60.0%)	7 (28.0%)	0.003
Placebo test za „pravi” bol / Placebo test for “real” pain	12 (41.4%)	8 (32.0%)	6 (24.0%)	2 (8.0%)	0.045
Način primene opioida / Route of opioid administration	15 (51.7%)	10 (40.0%)	20 (80.0%)	7 (28.0%)	0.002
Analgetici kao lek izbora / Analgesics as the drug of choice	23 (79.3%)	19 (76.0%)	6 (24.0%)	11 (44.0%)	< 0.001
Respiratorna depresija / Respiratory depression	17 (58.6%)	6 (24.0%)	2 (8.0%)	5 (20.0%)	< 0.001
Rizik od zloupotrebe / Risk of abuse	15 (51.7%)	7 (28.0%)	20 (80.0%)	12 (48.0%)	0.003
Fizička zavisnost / Physical addiction	4 (13.8%)	14 (56.0%)	18 (72.0%)	11 (44.0%)	< 0.001
Subjektivna procena bola / Subjective pain assessment	13 (44.8%)	8 (32.0%)	19 (76.0%)	3 (12.0%)	< 0.001

* Prikazani su tačni odgovori kao n (%).

Table 2. Differences in correct answers to the KASRP questionnaire items by organizational units

*Correct answers are presented as n (%).

pravilno procenilo intenzitet bola. U drugom prikazu slučaja (pitanje 42a), 58,7% medicinskih sestara – tehničara je netačno procenilo intenzitet bola, dok je 41,3% imalo pravilnu procenu. Kada je reč o doziranju analgetika (pitanja 41b i 42b), samo 4,8% medicinskih sestara – tehničara je u prvom prikazu slučaja odabralo odgovarajuću dozu morfina za ublažavanje bola, dok je njih 20,2% to učinilo u drugom prikazu slučaja. Statistički značajne razlike u tačnosti odgovora između organizacionih jedinica utvrđene su za nekoliko stavki KASRP upitnika (Tabela 2).

Nisu utvrđene statistički značajne razlike u KASRP skorovima između starosnih grupa, ni u ukupnom skoroviti u analizama prema pojedinačnim domenima (Tabela 3).

Analysis of responses to the case study questions (41a–42a) revealed difficulties in pain assessment in specific clinical situations. In the first case study (question 41a), 91.3% of nurses incorrectly assessed pain intensity, whereas only 8.7% provided the correct assessment. In the second case study (question 42a), 58.7% of nurses incorrectly assessed pain intensity, while 41.3% assessed it correctly. Regarding analgesic dosing (questions 41b and 42b), only 4.8% of nurses in the first case study and 20.2% in the second one selected the appropriate morphine dose for pain relief. Statistically significant differences in response accuracy across organizational units were identified for several KASRP items (Table 2).

No statistically significant differences in KASRP scores were observed across age groups, either in the overall score or in the domain-specific analyses (Table 3).

Tabela 3. Znanje po starosnim grupama

Domen / Domain	< 26	26–35	36–45	> 46	p
Ukupno / Overall	50.0 ± 8.4	52.3 ± 10.4	53.3 ± 8.4	52.9 ± 7.5	0.703
Bol povezan sa kancerom / Cancer-related pain	48.6 ± 23.2	42.4 ± 23.9	50.9 ± 23.5	51.7 ± 18.6	0.365
Procena bola / Pain assessment	35.7 ± 12.5	40.1 ± 18.0	37.7 ± 13.3	42.6 ± 14.9	0.504
Primena lekova / Pharmacological management	53.3 ± 14.9	56.2 ± 11.6	56.8 ± 10.8	54.3 ± 9.6	0.720
Zloupotreba supstanci / Substance abuse	69.1 ± 24.3	82.8 ± 27.8	81.8 ± 25.1	80.6 ± 23.9	0.377

* Podaci su prikazani kao aritmetička sredina ± standardna devijacija (SD)

Table 3. Knowledge by age group

* Data are presented as mean ± standard deviation (SD)

Tabela 4. Znanje po godinama radnog iskustva

Domen / Domain	<6	6–10	11–15	>16	p
Ukupno / Overall	50.5 ± 10.1	53.9 ± 8.1	50.7 ± 8.9	53.8 ± 8.2	0.341
Bol povezan sa kancerom / Cancer-related pain	43.3 ± 21.8	44.0 ± 22.1	51.4 ± 25.0	51.3 ± 21.9	0.402
Procena bola / Pain assessment	40.7 ± 16.3	40.0 ± 15.5	33.3 ± 14.5	41.3 ± 14.4	0.242
Primena lekova / Pharmacological management	52.9 ± 14.2	58.3 ± 9.7	54.8 ± 10.5	56.2 ± 10.5	0.444
Zloupotreba supstanci / Substance abuse	75.0 ± 24.6	86.7 ± 25.1	74.6 ± 27.7	82.9 ± 25.2	0.301

* Podaci su prikazani kao aritmetička sredina ± standardna devijacija (SD)

Slično tome, godine radnog iskustva nisu bile povezane sa statistički značajnim razlikama ni u ukupnom skor u niti u bilo kom od procenjivanih domena (Tabela 4).

Stepen obrazovanja takođe nije bio statistički značajno povezan sa razlikama u ukupnom skor u niti u

Table 4. Knowledge by years of work experience

Domen / Domain	<6	6–10	11–15	>16	p
Ukupno / Overall	50.5 ± 10.1	53.9 ± 8.1	50.7 ± 8.9	53.8 ± 8.2	0.341
Bol povezan sa kancerom / Cancer-related pain	43.3 ± 21.8	44.0 ± 22.1	51.4 ± 25.0	51.3 ± 21.9	0.402
Procena bola / Pain assessment	40.7 ± 16.3	40.0 ± 15.5	33.3 ± 14.5	41.3 ± 14.4	0.242
Primena lekova / Pharmacological management	52.9 ± 14.2	58.3 ± 9.7	54.8 ± 10.5	56.2 ± 10.5	0.444
Zloupotreba supstanci / Substance abuse	75.0 ± 24.6	86.7 ± 25.1	74.6 ± 27.7	82.9 ± 25.2	0.301

* Data are presented as mean ± standard deviation (SD)

Similarly, years of work experience were not associated with significant differences in the overall score or in any of the assessed domains (Table 4).

Education level was also not significantly associated with differences in the overall score or any of the

Tabela 5. Razlika u znanju medicinskih sestara – tehničara o bolu u odnosu na stepen obrazovanja

Domen / Domain	Srednje obrazovanje / Secondary education	Više/Visoko obrazovanje / Higher education	p
Ukupno/ Overall	52.4 ± 8.5	52.7 ± 10.9	0.910
Bol povezan sa kancerom/ Cancer-related pain	48.2 ± 21.6	47.1 ± 28.9	0.869
Procena bola/ Pain assessment	39.2 ± 14.7	39.7 ± 18.4	0.923
Primena lekova/ Pharmacological management	55.6 ± 11.2	55.1 ± 12.5	0.857
Zloupotreba supstanci/ Substance abuse	79.6 ± 26.3	83.3 ± 21.7	0.617

* Podaci su prikazani kao aritmetička sredina ± standardna devijacija (SD).

bilo kom od procenjivanih domena (Tabela 5). Nasuprot tome, statistički značajne razlike u KASRP skorovima utvrđene su između organizacionih jedinica, kako u ukupnom skor u, tako i u svim procenjivanim domenima (Tabela 6).

Tabela 6. Razlika u znanju medicinskih sestara – tehničara o bolu, ukupno i po domenima, i prema vrsti organizacione jedinice gde su zaposleni

Domen / Domain	Hirurška onkologija / Surgical oncology	Internistička onkologija / Medical oncology	Radioterapija / Radiotherapy	Anestezija sa reanimacijom / Anesthesia and resuscitation	p
Ukupno / Overall	49.6 ± 7.7	50.7 ± 8.3	56.2 ± 10.5	53.7 ± 7.4	0.026
Bol povezan sa kancerom / Cancer-related pain	61.4 ± 18.5	47.2 ± 18.1	44.8 ± 18.5	36.8 ± 27.5	<0.001
Procena bola / Pain assessment	37.5 ± 11.3	37.3 ± 13.2	48.0 ± 16.9	34.7 ± 16.5	0.008
Primena lekova / Pharmacological management	49.3 ± 11.0	54.3 ± 10.7	57.8 ± 12.4	61.8 ± 6.9	<0.001
Zloupotreba supstanci / Substance abuse	72.4 ± 28.3	70.7 ± 29.4	89.3 ± 18.6	89.3 ± 18.6	0.005

*Podaci su prikazani kao aritmetička sredina ± standardna devijacija).

* Data are presented as mean ± standard deviation (SD).

assessed domains (Table 5). In contrast, statistically significant differences in KASRP scores were observed across organizational units in both the overall score and all assessed domains (Table 6).

Table 6. Differences in nurses' knowledge about pain, overall and by domains, and by the type of organizational unit of employment

DISKUSIJA

Ova studija prikazuje preliminarne rezultate primene upitnika pod nazivom: Anketa o znanju i stavovima o bolu (engl. *Knowledge and Attitudes Survey Regarding Pain – KASRP*) među medicinskim sestrama – tehničarima zaposlenim na Institutu za onkologiju Vojvodine. Visoki procenat adekvatno popunjenih upitnika ukazuje na to da je *KASRP* bio pogodan za primenu u ispitivanoj populaciji. Rezultati su pokazali prosečan nivo znanja i neutralne stavove prema bolu, što ukazuje na to da, iako su medicinske sestre – tehničari posedovali zadovoljavajući opšti nivo znanja, postoje značajni nedostaci u pojedinim oblastima lečenja bola.

KASRP upitnik ima široku primenu u proceni znanja i stavova o bolu među medicinskim sestrama – tehničarima, ali i drugim zdravstvenim radnicima u različitim zdravstvenim ustanovama [14–16]. Kao i u prethodnoj studiji sprovedenoj u Etiopiji, ova studija je bila posebno usmerena na medicinske sestre – tehničare koji rade u onkologiji [17]. Razlike između studija mogu se objasniti razlikama u zdravstvenim sistemima, obrazovanju medicinskih sestara i njihovim kliničkim odgovornostima u različitim zemljama. Dok su pojedine studije pokazale nedovoljno znanje i negativne stavove prema bolu [18,19], povoljniji rezultati opisani su u drugim populacijama medicinskih sestara – tehničara [15]. Ukupan *KASRP* skor utvrđen u ovoj studiji, koji ukazuje na prosečan nivo znanja i neutralne stavove prema bolu, uporediv je sa rezultatima studije sprovedene u Kini [20].

Većina ispitanika u ovoj studiji bila je uzrasta od 26 do 45 godina i imala je više od 16 godina radnog iskustva. Većina je imala diplomu srednje medicinske škole, dok je manji procenat imao više nivo obrazovanja iz oblasti sestrinstva. Iako se kontinuirano profesionalno obrazovanje sve više prepoznaje kao važna komponenta sestrinske prakse i može doprineti većoj profesionalnoj autonomiji, rezultati ove studije ukazuju na potrebu za dodatnim obrazovanjem iz oblasti lečenja bola [21].

Najniži skorovi u ovoj studiji su zabeleženi u domenu bola povezanog sa karcinomom i domenu procene bola; prosečni skorovi su zabeleženi u domenu farmakološkog lečenja, dok su najviši skorovi zabeleženi u domenu zloupotrebe supstanci. Ovi preliminarni rezultati ukazuju na to da procena bola, naročito kod pacijenata sa karcinomom, ostaje oblast u kojoj je potrebna dodatna edukativna podrška.

Slični rezultati zabeleženi su i u Vijetnamu, gde su medicinske sestre – tehničari uglavnom bili upoznati sa analgeticima koji se koriste za dugotrajno lečenje bola kod pacijenata sa karcinomom, ali su pokazali ograničeno znanje u vezi sa preporučenim putem primene opioida kod perzistentnog bola povezanog sa karci-

DISCUSSION

This study presents preliminary results from administering the Knowledge and Attitudes Survey Regarding Pain (*KASRP*) questionnaire to nurses employed at the Institute of Oncology of Vojvodina. The high proportion of appropriately completed questionnaires indicates that the *KASRP* was feasible for use in the study population. The findings demonstrated an average level of knowledge and neutral attitudes toward pain, suggesting that although nurses possessed a satisfactory overall level of knowledge, important gaps remain in specific areas of pain management.

The *KASRP* questionnaire has been widely used to assess knowledge and attitudes relating to pain among nurses and other healthcare professionals in various healthcare settings [14–16]. As in a previous study conducted in Ethiopia, the present study focuses specifically on oncology nurses [17]. The differences between the studies may be explained by variations in healthcare systems, nursing education, and clinical responsibilities across countries. While some studies have reported insufficient knowledge and negative attitudes toward pain [18,19], more favorable results have been described in other nursing populations [15]. The overall *KASRP* score observed in the present study, indicating an average level of knowledge and neutral attitudes toward pain, is comparable to findings reported in a study conducted in China [20].

Most respondents in the present study were between 26 and 45 years old and had more than 16 years of professional experience. A majority of them had a secondary medical school diploma, while a smaller proportion had higher-level degrees in nursing education. Although continuing professional education is increasingly recognized as an important component of nursing practice and may support greater professional autonomy, the present findings suggest that additional education in pain management remains necessary [21].

The lowest scores in the present study were observed in the domains of cancer-related pain and pain assessment; average scores were recorded in pharmacological management, while the highest scores were found in the substance abuse domain. These preliminary findings suggest that pain assessment, particularly in patients with cancer, remains an area requiring additional educational support.

Similar findings have been reported in Vietnam, where nurses were generally familiar with analgesics used for long-term cancer pain, but demonstrated limited knowledge regarding the recommended route of administering opioids in persistent cancer pain. In the same study, fewer than half of the nurses correctly an-

nomom. U istoj studiji, manje od polovine medicinskih sestara – tehničara je tačno odgovorilo na pitanja koja su se odnosila na procenu bola, a samo četvrtina njih prepoznala je centralnu ulogu pacijenta u proceni sopstvenog bola [11].

U domenu farmakološkog lečenja, većina medicinskih sestara – tehničara je pravilno prepoznala da doze opioda treba prilagođavati u skladu sa odgovorom pacijenta. Međutim, manji broj učesnika prepoznao je korist od kombinovanja analgetika sa različitim mehanizmima dejstva, što može poboljšati kontrolu bola uz istovremeno smanjenje neželjenih efekata. Znanje o ekvivalentnom doziranju takođe je bilo ograničeno, budući da je samo jedna trećina učesnika pravilno identifikovala ekvivalentne intravenske i oralne doze morfina. U domenu zloupotrebe supstanci, većina medicinskih sestara – tehničara je prepoznala značaj procene stepena sedacije tokom terapije opiodima i pravilno razumela definiciju zavisnosti.

U našoj studiji, starost nije bila povezana sa KASRP skorovima. Slični rezultati zabeleženi su i u Saudijskoj Arabiji [12], dok je studija iz Nepala pokazala statistički značajne razlike u znanju i stavovima u vezi sa bolom u zavisnosti od životnog doba [22]. Takođe, ni godine profesionalnog iskustva ni nivo obrazovanja nisu bili povezani sa KASRP skorovima. Iako bi se moglo očekivati da duže profesionalno iskustvo i viši nivo obrazovanja doprinose boljem znanju i pozitivnijim stavovima, takva povezanost nije uočena u ovoj studiji. U studiji sprovedenoj u Libanu zabeleženi su bolji rezultati kod iskusnijih i bolje obrazovanih medicinskih sestara [23], dok su naši nalazi bili više u skladu sa rezultatima koje su objavili Šdaifat i saradnici [19]. Ovi nalazi ukazuju na to da formalno obrazovanje i godine profesionalnog iskustva sami po sebi možda nisu dovoljni ukoliko se znanje o lečenju bola kontinuirano ne unapređuje kroz strukturisanu edukaciju i kliničku obuku.

Uočene razlike između organizacionih jedinica ukazuju na to da razmena znanja može da doprinese ujednačenijoj praksi lečenja bola i smanjenju varijabilnosti u donošenju kliničkih odluka. Odgovori na pitanja zasnovana na prikazima slučajeva ukazuju na teškoće u proceni bola i donošenju odluka u vezi sa primenom opioda u konkretnim kliničkim situacijama. Samo mali procenat medicinskih sestara odabrao je odgovarajuću dozu analgetika za ublažavanje bola, što može da ukazuje na nesigurnost u prevođenju intenziteta bola koji pacijenti sami prijavljuju u odgovarajuće odluke o lečenju. Ovaj nalaz je klinički značajan jer neadekvatna analgezija može da produži patnju pacijenta, dok neodgovarajuće doziranje opioda može da poveća rizik od neželjenih efekata. Slični rezultati zabeleženi su u prethodnim studijama, u kojima su medicinske sestre

swered questions related to pain assessment, and only one quarter of them recognized the patient's central role in assessing their own pain [11].

In the domain of pharmacological management, most nurses correctly recognized that opioid doses should be adjusted according to the patient's response. However, fewer participants recognized the benefit of combining analgesics with different mechanisms of action, which may improve pain control while reducing adverse effects. Knowledge of equianalgesic dosing was also limited, as only one third of participants correctly identified equivalent intravenous and oral morphine doses. In the domain of substance abuse, most nurses recognized the importance of assessing sedation during opioid therapy and correctly understood the definition of addiction.

In the present study, age was not associated with KASRP scores. Similar findings were reported in Saudi Arabia [12], whereas a study from Nepal found significant differences in pain-related knowledge and attitudes according to age [22]. Likewise, neither years of professional experience nor education level were associated with KASRP scores. Although greater professional experience and a higher level of education might be expected to contribute to better knowledge and attitudes, such an association was not observed in the present study. A study conducted in Lebanon reported better outcomes among more experienced and better-educated nurses [23], whereas our findings were more consistent with those reported by Shdaifat et al. [19]. These findings suggest that formal education and years of professional practice alone may not be sufficient unless pain management is continuously reinforced through structured education and clinical training.

The observed differences between organizational units suggest that knowledge exchange may contribute to more consistent pain management practices and reduce variability in clinical decision-making. Responses to the case-based questions suggest difficulties in pain assessment and opioid-related decision-making in specific clinical situations. Only a small proportion of nurses selected the appropriate analgesic dose for pain relief, which may reflect uncertainty in translating patients' self-reported pain intensity into treatment decisions. This finding is clinically relevant because inadequate analgesia may prolong patient suffering, whereas inappropriate opioid dosing may increase the risk of adverse effects. Similar findings have been reported in previous studies, where nurses demonstrated better general knowledge of pain assessment and management than of opioid dosing and opioid-related adverse effects [24].

pokazale bolje opšte znanje o proceni i lečenju bola nego o doziranju opioda i neželjenim efektima povezanim sa primenom opioda [24].

U našoj studiji, utvrđene su razlike između organizacionih jedinica u nekoliko oblasti povezanih sa procenom bola i primenom opioda. Medicinske sestre – tehničari sa Klinike za radioterapiju i Klinike za medicinsku onkologiju češće su prepoznavali da sami vitalni znaci nisu pouzdani pokazatelji intenziteta bola nego medicinskih sestara – tehničara sa Klinike za hiruršku onkologiju i iz Službe anesteziologije sa reanimatologijom. Niža tačnost odgovora zabeležena je kod medicinskih sestara – tehničara iz Službe anesteziologije sa reanimatologijom u pogledu primene injekcija sterilne vode u proceni bola. Nasuprot tome, medicinske sestre – tehničari sa Klinike za radioterapiju češće su prepoznavali preporučeni put primene opioda kod perzistentnog bola povezanog sa karcinomom, dok su medicinske sestre – tehničari sa Klinike za medicinsku onkologiju i Klinike za hiruršku onkologiju češće prepoznavali morfin kao preferiranu terapijsku opciju za dugotrajni umereni do jaki bol povezan sa karcinomom. Medicinske sestre – tehničari sa Klinike za hiruršku onkologiju takođe su češće prepoznavali da je klinički značajna respiratorna depresija neuobičajena kod pacijenata sa karcinomom koji primaju stabilnu dugotrajnu terapiju opiodima.

Opstipacija, mučnina, sedacija, konfuzija, halucinacije, retencija urina i vrtoglavica spadaju među češće neželjene efekte povezane sa primenom opioda, dok se respiratorna depresija smatra neuobičajenom kada se opiodi titiraju na odgovarajući način u lečenju bola kod pacijenata sa karcinomom [25,26]. Prilagođavanje respiratornim efektima opioda tokom produžene terapije može dodatno da smanji rizik od klinički značajne respiratorne depresije [27,28].

Najveći udeo tačnih odgovora na pitanja koja su se odnosila na zloupotrebu alkohola i/ili droga zabeležen je među medicinskim sestrama – tehničarima sa Klinike za radioterapiju. Ispitanici iz ove organizacione jedinice takođe su češće prepoznavali manifestacije fizičke zavisnosti nakon naglog prekida primene opioda. Pored toga, medicinske sestre – tehničari sa Klinike za radioterapiju preciznije su procenjivali intenzitet bola primenom numeričke skale za procenu bola nego medicinske sestre – tehničari iz drugih organizacionih jedinica. Ove razlike mogu da odražavaju varijacije u kliničkoj izloženosti, obuci i praktičnom iskustvu između organizacionih jedinica.

U celini, preliminarni nalazi ukazuju na to da su medicinske sestre – tehničari zaposleni na onkologiji pokazali umereno znanje i uglavnom neutralne stavove prema lečenju bola povezanog sa karcinomom, uz niže

In the present study, differences between organizational units were observed in several areas related to pain assessment and opioid use. Nurses from the Clinic for Radiotherapy and the Clinic for Medical Oncology more frequently recognized that vital signs alone are not reliable indicators of pain intensity than was the case with the nurses working at the Clinic for Surgical Oncology and the Department of Anesthesiology with Resuscitation. Lower response accuracy was observed among nurses from the Department of Anesthesiology with Resuscitation regarding the use of sterile water injections in pain assessment. In contrast, nurses from the Clinic for Radiotherapy more frequently identified the recommended route of opioid administration for persistent cancer-related pain, while nurses from the Clinic for Medical Oncology and the Clinic for Surgical Oncology more often recognized morphine as the preferred treatment option for prolonged moderate to severe cancer pain. Nurses from the Clinic for Surgical Oncology also more frequently recognized that clinically significant respiratory depression is uncommon in cancer patients receiving stable long-term opioid therapy.

Constipation, nausea, sedation, confusion, hallucinations, urinary retention, and dizziness are among the more common opioid-related adverse effects, whereas respiratory depression is considered uncommon when opioids are appropriately titrated for cancer pain management [25,26]. Adaptation to the respiratory effects of opioids during prolonged therapy may further reduce the risk of clinically significant respiratory depression [27,28].

The highest proportion of correct responses to questions related to alcohol and/or drug abuse was observed among nurses from the Clinic for Radiotherapy. Participants from this organizational unit also more frequently recognized manifestations of physical dependence following abrupt opioid discontinuation. In addition, nurses from the Clinic for Radiotherapy assessed patients' pain intensity more accurately using the numerical pain rating scale than nurses from other organizational units. These differences may reflect variations in clinical exposure, training, and practical experience across organizational units.

Overall, preliminary findings suggest that oncology nurses demonstrated moderate knowledge and generally neutral attitudes toward cancer pain management, with lower scores particularly in the domains of pain assessment and opioid-related knowledge. From a clinical perspective, insufficient knowledge in these areas may affect timely pain recognition, treatment decisions, and patient comfort. Continuous professional education focused on evidence-based pain assessment, safe opioid use, and comprehensive

skorove naročito u domenima procene bola i znanja povezanog sa primenom opioda. Sa kliničkog aspekta, nedovoljno znanje u ovim oblastima može da utiče na pravovremeno prepoznavanje bola, donošenje odluka o lečenju i udobnost pacijenata. Kontinuirano profesionalno obrazovanje usmereno na procenu bola zasnovanu na dokazima, bezbednu primenu opioda i sveobuhvatno lečenje bola povezanog sa karcinomom stoga bi moglo da unapredi kliničku praksu. Veća saradnja i razmena iskustava između onkoloških, radio-terapijskih i anestezioloških jedinica takođe bi mogle da doprinesu ujednačenijoj praksi lečenja bola i povećanju sigurnosti medicinskih sestara – tehničara u donošenju kliničkih odluka.

Ova studija ima nekoliko ograničenja koja treba uzeti u obzir prilikom tumačenja rezultata. Istraživanje je sprovedeno u jednoj onkološkoj ustanovi, što može da ograniči mogućnost generalizacije rezultata na druga zdravstvena okruženja. Pored toga, podaci su prikupljeni primenom upitnika zasnovanog na samoproceni, na koji može uticati pristrasnost u davanju odgovora. Rezultati ukazuju na to da je KASRP upitnik pogodan za primenu u ovoj ispitivanoj populaciji. Ovi preliminarni rezultati mogu da predstavljaju osnovu za buduća istraživanja znanja i stavova u vezi sa bolom među medicinskim sestrama – tehničarima koji rade u onkologiji u Srbiji.

ZAKLJUČAK

KASRP upitnik se pokazao kao pogodan za primenu u ovoj ispitivanoj populaciji. Preliminarni rezultati ukazuju na to da su medicinske sestre – tehničari na Institutu za onkologiju Vojvodine pokazali prosečan nivo znanja i uglavnom neutralne stavove prema bolu, pri čemu su najniži rezultati zabeleženi u domenima bola povezanog sa karcinomom i procene bola, prosečni rezultati u domenu primene lekova, a najbolji rezultati u domenu zloupotrebe supstanci. Starost medicinskih sestara – tehničara, godine radnog iskustva i nivo obrazovanja nisu bili povezani sa znanjem i stavovima prema bolu. Nivo znanja o proceni i lečenju bola razlikovao se među medicinskim sestrama – tehničarima iz različitih klinika i službi. Niži skorovi na stavkama koje se odnose na kliničke scenarije mogu ukazivati na teškoće u proceni bola i donošenju kliničkih odluka u konkretnim situacijama.

Sukob interesa: Nije prijavljen.

cancer pain management may therefore improve clinical practice. Greater collaboration and experience exchange between oncology, radiotherapy, and anesthesiology units could also contribute to more consistent pain management practices and strengthen nurses' confidence in clinical decision-making.

This study has several limitations to be considered when interpreting the findings. The research was conducted in a single oncology institution, which may limit the generalizability of the results to other healthcare settings. In addition, data were collected using a self-reported questionnaire, which may be influenced by response bias. The findings suggest that the KASRP questionnaire is feasible for use in this study population. These preliminary results may provide a basis for future research on pain-related knowledge and attitudes among oncology nurses in Serbia.

CONCLUSION

The KASRP questionnaire proved feasible for use in this study population. The preliminary findings indicate that nurses at the Institute of Oncology of Vojvodina demonstrated average knowledge and generally neutral attitudes toward pain, with the lowest results in the domains of cancer-related pain and pain assessment, average results in medication use, and the best results in the domain of substance abuse. The nurses' age, years of work experience, and education level were not associated with knowledge and attitudes toward pain. The knowledge level regarding pain assessment and management varied among nurses from different clinics and departments. Lower scores on the items related to clinical scenarios may indicate difficulties in pain assessment and clinical decision-making in specific situations.

Conflict of interest: None declared.

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