

Digital Skills Development Assessment Among Therapeutic Radiographers

Dina Gonçalves



SAFE Europe
Safe And Free Exchange of
EU Radiography Professionals
across Europe

Co-funded by the
Erasmus+ Programme
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Ulster
University
(Project coordinator)





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Digital Skills Role in Radiation Therapist's Profile: Case Study

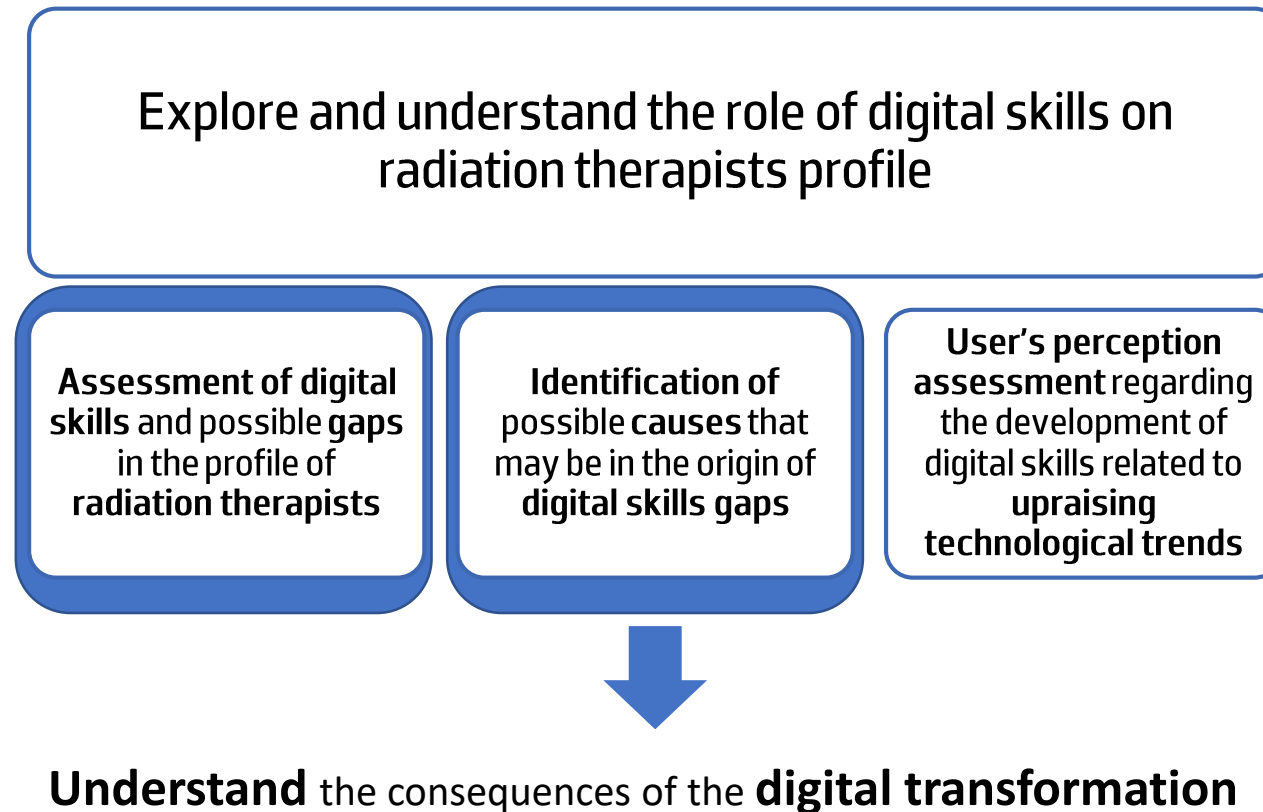
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Bárbara Barbosa (MSc); Radiotherapy Department, IPOP; IPO Porto Research Centre (CI-IPOP)

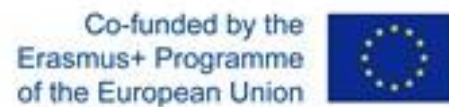
Celeste Oliveira (MSc); Radiotherapy Department, IPOP

Digital Skills Role in Radiation Therapist's Profile: Case Study



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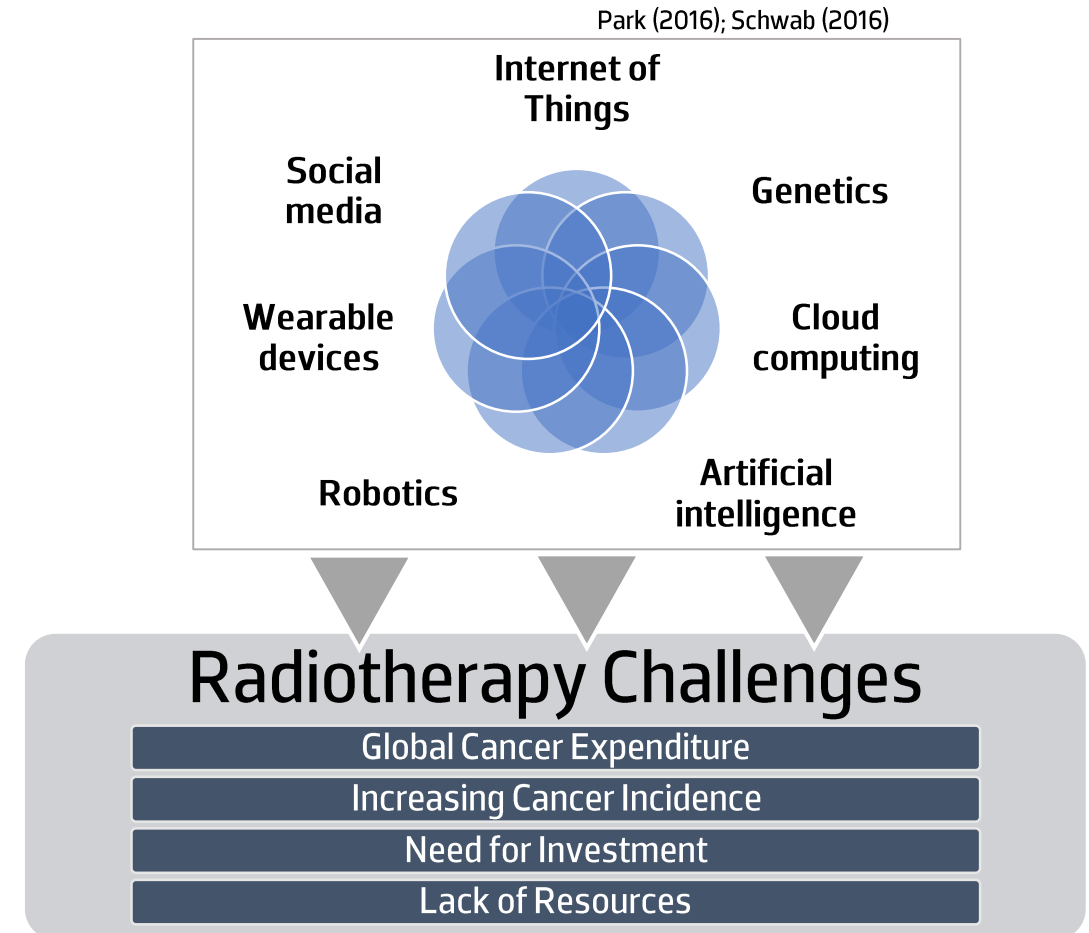
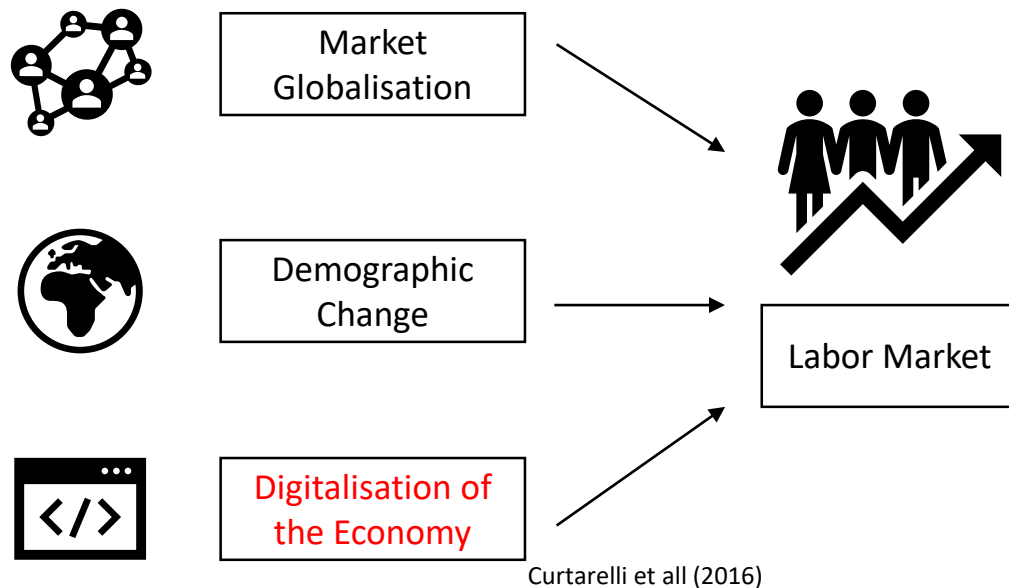


Disclosures

- ?

Digitalisation of the Economy

-Fourth Industrial Revolution-



Zubizarreta, Van Dyk, & Lievens (2017), WHO (2018),
Abdel-Wahab, Fidarova, & Polo (2017)

Digitalisation of the Economy

-Digital Skills Demand-



Fau & Moreau (2018); European Commission (2019)

Skills Shortages

Market demand by a particular skill
surpasses the number of individuals available
with the desired skill

Skills Mismatches

Qualitative divergence between the qualifications
and skills demanded by the labour market and those
owned by the individuals.

Cedefop (2015); Curtarelli et al., (2016)

Digitalisation of the Economy

-Digital Skills Demand-

Study: 207 health professionals living across 21 EU Member States

50% were using daily basic IT skills

61% never received digital skills training

54% of those who received training rated it as insufficient



Skills Shortage and Mismatch

Professionals in the public health and care system **frustrated** due to **lack of training in digital health**



Reskilling and upskilling the healthcare workforce

Docherty et al. (2018)

Background

-Digital Skills Indicators-

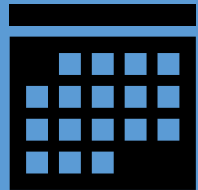


Cedefop (2016); Curtarelli et al. (2016); European Commission (2019); Fau & Moreau (2018); House of Commons Science and Technology Committee (2016); OECD (2016, 2017, 2018)

Methods

-Data Collection & Analysis-

3rd - 15th of August 2019



Aptidões Digitais dos Radioterapeutas - "Digital Skills of the Therapeutic Radiographers"

Caro participante,

O presente questionário enquadra-se no projecto "Safe and Free Exchange of EU Radiography Professionals across Europe – SAFE EUROPE" [grant agreement 2018-2993/001-001], ao abrigo do programa "Erasmus + Sector Skills Alliances" da União Europeia (UE).

O consórcio europeu deste projecto é representado pela Ulster University – UU (UK), University of Malta – UoM (MT), European Federation of Radiographer Societies – EFRS, Associação Portuguesa de Radioterapeutas – ART (PT), Instituto Português de Oncologia do Porto – IPOPOP (PT), Society of Medical Radiographers – SRM (MT) e Towarzystwo Naukowe Techników Medycznych Radioterapii – TNTMR (PL).

Esta investigação insere-se no "Work Package" 7 (WP7), designado por "Digital Skills for TRs", sendo liderado pela equipa do IPOPOP.

Objectivo:

O objectivo deste questionário é avaliar o nível de desenvolvimento das aptidões digitais, no exercício da Radioterapia, bem como os factores que o influenciam. Pretende-se também identificar quais as aptidões digitais emergentes e a(s) fase(s), mais adequadas, no percurso profissional, para a aquisição e desenvolvimento destas mesmas aptidões.

Metodologia:

Este questionário será aplicado a nível nacional nos seguintes países: Portugal, Malta, Reino Unido e Polónia (participantes no SAFE EUROPE).

Considerações éticas

A identidade dos participantes será mantida confidencial. Nenhuma informação que permita a identificação dos participantes será publicada.

Todos os dados recolhidos serão tratados de acordo com o Regulamento Geral de Protecção de Dados (UE) e analisados pelos investigadores do projecto SAFE EUROPE.

O questionário demorará aproximadamente 30 minutos a preencher. Pode desistir a qualquer momento antes da sua submissão.

Desde já muito obrigado pela sua participação.

Caso tenha alguma questão por favor não hesite em contactar.

Bárbara Meireles Barbosa

barbara.barbosa@ipopop.min-saude.pt

**Required*

I- Sociodemographic Evaluation

II- Digital Skills – Generic

III- Digital Skills – Transversal

IV- Digital Skills – Specific

- A – Image
- B – Treatment Planning
- C – Treatment Delivery

V- Digital Skills – Quality, Security and Risk Management

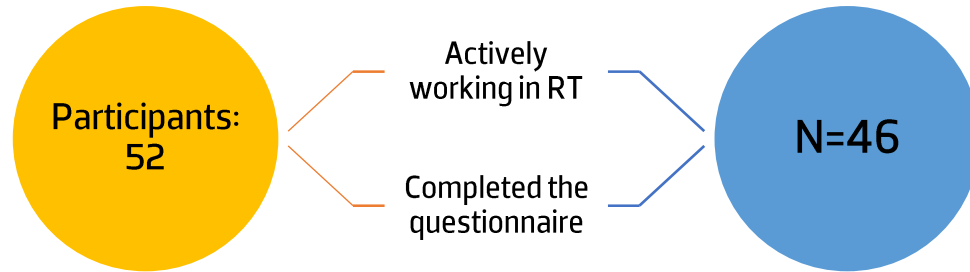
VI- Digital Skills – Management and Research

VII- Digital Skills – Training

VIII- Digital Skills – Technology

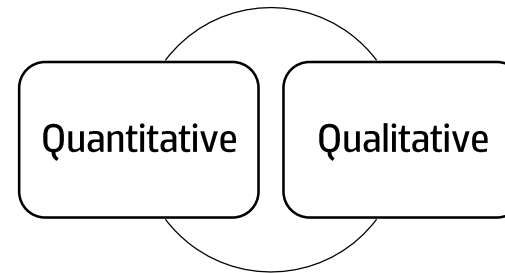
Methods

-Data Collection & Analysis-



Microsoft Office Excel ®

SPSS IBM Statistics ®



Continuous

Median
Percentile 25
Percentile 75
Minimum
Maximum

Continuous VS Categorical

Mann-Whitney
Kruskal-Wallis

Categorical VS Categorical

Chi-square
Fisher

$p < 0,05$, Confidence level of 95%

Methods

-Questionnaire Evaluation-

29. Indicate **your level of development in performing the following communication-related tasks***

Mark only one oval per row.

	1	2	3	4	5	0
	1- Not Important	2	3	4	5 - Extremely Important	I don't know
Create and use an internal communication channel (eg, chat, intranet, platform) between radiation therapists and other professionals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create and use an external communication channel (eg mobile applications) between radiation therapists and patient / family	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use institutional email	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create and disable a patient alert	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create and use multimedia resources for patient education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5

Standardisation

Maximum value per question → 100

$$x = \frac{y \times 100}{25}$$

y = Participant score

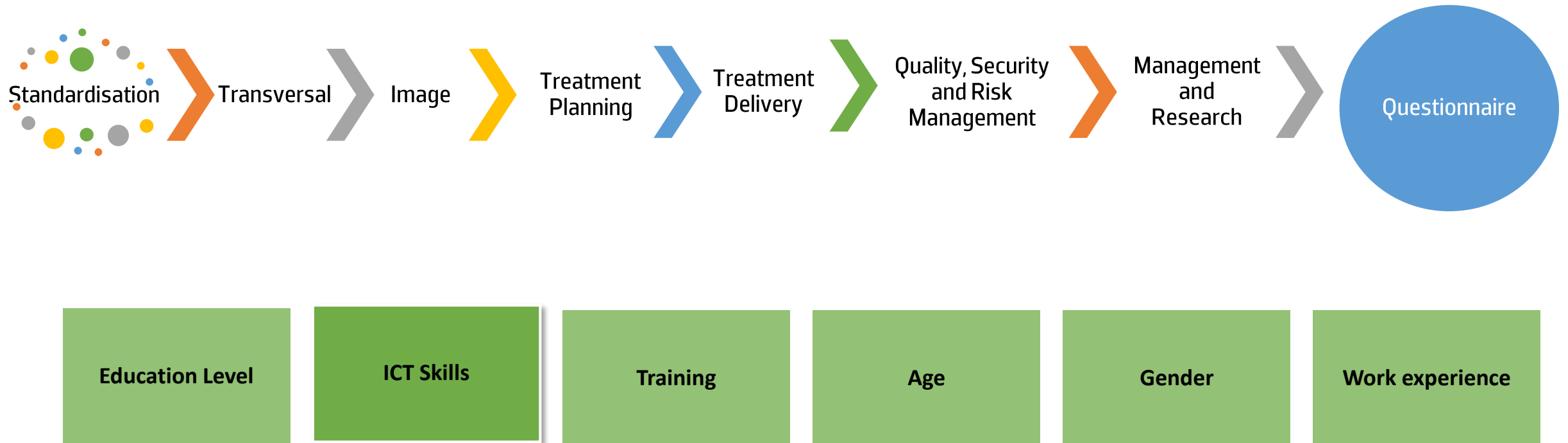
x = Participant score

standardised

<https://forms.gle/Z7vwp11DwykHaUYz7>

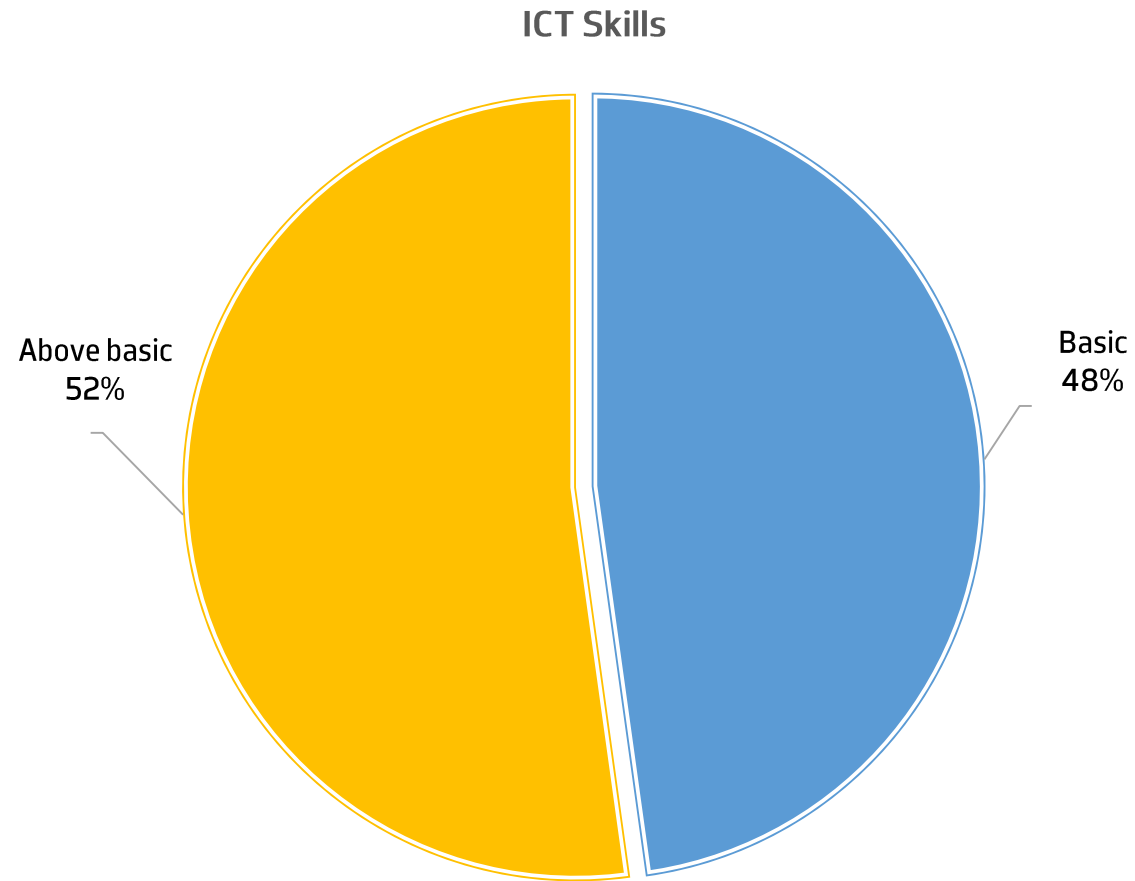
Methods

-Questionnaire Evaluation-



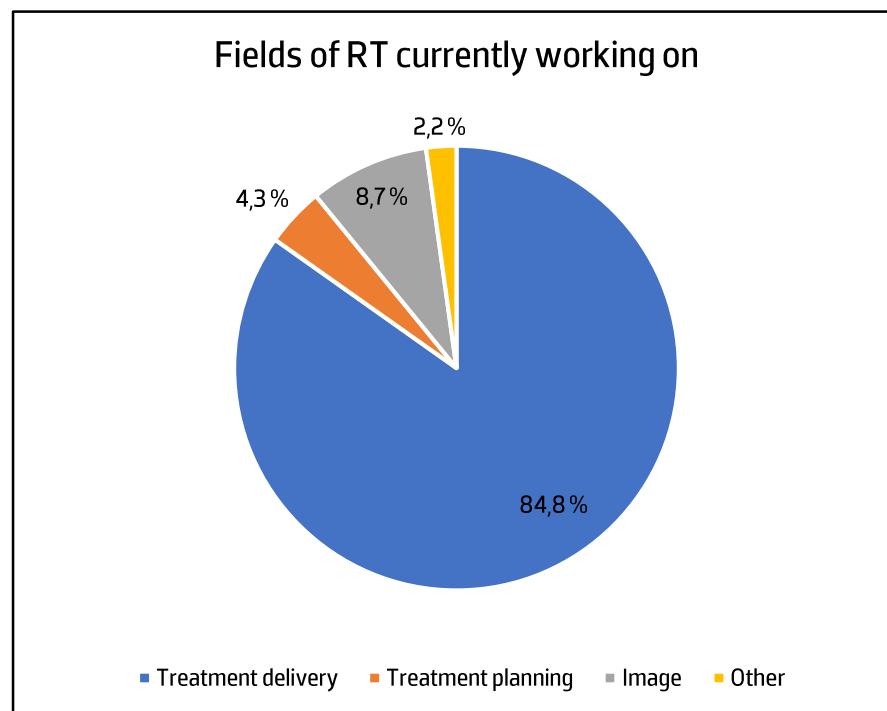
Results & Discussion

-Radiation Therapists and ICT Skills-



Results & Discussion

-Radiation Therapists and Digital Skills-



Skills Mismatch

	Median	Percentile		Min	Max
		25	75		
Transversal	71	62,75	81	27	98
Image	45	35,75	61	20	77
Treatment Planning	23	20	30,25	0	82
Treatment Delivery	79,50	72,75	86	22	100
Quality, Security and Risk Management	47	35,75	60	22	96
Management and Research	39,50	29	50	10	94
Questionnaire	51,50	46	57	23	76

Work experience

Usage

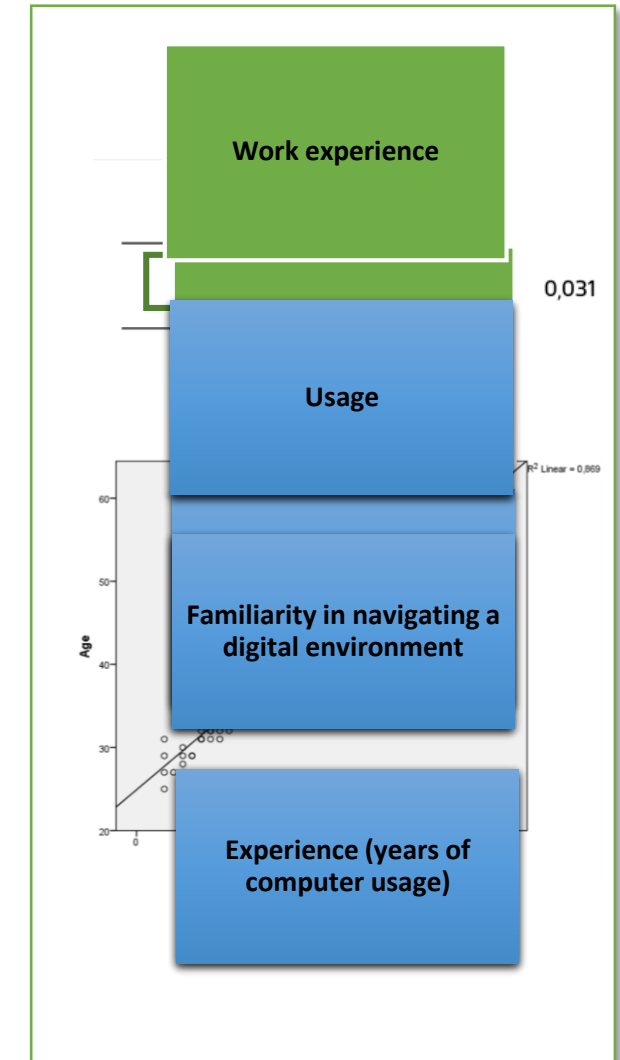
Familiarity in
navigating a digital
environment

Results & Discussion

-Radiation Therapists and Digital Skills-

	Transversal	Image	Treatment Planning	Treatment Delivery	Quality, Security and Risk Management	Management and Research	Questionnaire
✗ Gender	0,080	0,097	0,307	0,197	0,846	0,860	0,124
✗ Age	0,180	0,703	0,865	0,696	0,031	0,110	0,323
✓ Education level	0,124	0,098	0,499	0,739	0,246	0,039	0,052
✓ Other training besides RT	0,149	0,096	0,254	0,707	0,122	0,009	0,071
✓ Fields of RT with experience	0,177	0,000	0,386	0,356	0,362	0,122	0,063
Fields of RT currently working on	0,192	0,031	0,082	0,081	0,104	0,559	0,147
✗ Training in the past 12 months that enabled digital skills development	0,189	0,650	0,537	0,071	0,423	0,658	1,000
✓ Years of experience RT	0,102	0,195	0,907	0,004	0,005	0,482	0,071

* Significance level of $p < 0,05$



Results & Discussion

-Radiation Therapists and Digital Skills-

	Transversal	Image	Treatment Planning	Treatment Delivery	Quality, Security and Risk Management	Management and Research	Questionnaire
Data Processing	0,210	0,612	0,882	0,090	0,280	0,026	0,096
Communication	0,316	0,990	0,482	0,990	0,503	0,032	0,232
Content Creation	0,102	0,108	0,933	0,480	0,056	0,015	0,059
Security	0,055	0,604	0,495	0,466	0,133	0,058	0,059
Problem Solving	0,007	0,473	0,646	0,154	0,045	0,012	0,009
ICT skills	0,029	0,252	0,403	0,206	0,040	0,013	0,010
*Significance level of $p < 0,05$							



Education level

Usage

Experience (years of computer usage)

Familiarity in navigating a digital environment

Numeracy/literacy level

Digital Skills Development Assessment Among Therapeutic Radiographers

Recommendations

Review and update existing curricula, integrating digital knowledge, skills and competency requirements

Investment in the professionals digital skills training

Creation of digital skills training programmes – technological trends inherent digital skills

Thank You For Your Attention

SAFE EUROPE Project

Study Participants, IPOP

Dr. Luís Antunes, Epidemiology Department, IPOP