



Online Professional Education for
Physiotherapists on Domestic Violence

OPEP-DV

REPORT ON PHYSIOTHERAPY AND DOMESTIC VIOLENCE:

Survey results

Co-funded by the
Erasmus+ Programme
of the European Union



Online Professional Education for Physiotherapists and other healthcare professionals on Domestic Violence – OPEP-DV

2021-1-EE01-KA220-VET-000029791

KA 220-VET – Cooperation partnerships in vocational education and training

PR1: Report on physiotherapy and Domestic Violence

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2023



This publication was prepared in the framework of the project Online Professional Education for Physiotherapists and other healthcare professionals on Domestic Violence (OPEP-DV) AGREEMENT NUMBER 2021-KA220-VET-07 PROJECT NUMBER 2021-1-EE01-KA220-VET-000029791

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Introduction

Domestic violence (DV) is a form of violence against women as it disproportionately affects women and girls, and it is one of the most systematic and common human rights violations globally. European countries are no exception. One in three women has experienced physical or sexual violence, mostly perpetrated by intimate partners (FRA, 2014). It occurs in the family or domestic unit, irrespective of biological or legal family ties, either between intimate partners or other family members, including parents and children. Women are disproportionately affected by both forms of violence due to the underlying patterns of coercion, power, and/or control (Stark and Hester, 2019). Every day around the world, 137 women and girls are killed due to their gender by a family member or by a current or former intimate partner (UNODC, 2019). However, anyone can be a potential victim of such violence, regardless of their sex or gender. In the case of DV, in particular, it can affect any person, including men, younger or older people, children, and LGBTIQ¹ persons.

A significant increase in physical and emotional violence against women was registered during the COVID-19 pandemic. Reports indicate that calls to DV helplines have increased five-fold in some countries. The EU and its member states are working on different fronts to end gender-based violence, protect the victims of this heinous crime, and punish offenders. Researchers in the field report a lack of evidence to assess violence against women, which is also evident in the EU's Gender Equality Index for the indicator "Violence against women" whereby no score is given to the EU in the domain of violence, due to a lack of comparable EU-wide data (Walby, 2016).

Given the high prevalence of intimate partner violence (IPV) and DV in the population, healthcare staff must be aware of how to identify and correctly respond to cases of DV.

The terms IPV and DV are not uniformly defined in the literature. McCloskey et al. (2007), referring to the American Medical Association, define IPV as "repeated battering and injury, psychological abuse, sexual assault, progressive social isolation, deprivation, and intimidation". IPV may include any physical, psychological, or sexual abuse by a partner (Walton et al. 2015). Carlson and Worden (2005) argue that DV includes "a broader range of abusive behaviours" than only physical aggression. Stark's (2019) paramount research on "coercive control" highlights the pattern of behaviours of perpetrators that includes acts of assault, threats, humiliation, intimidation, or other abuse used to harm, punish, or frighten their victim. Moving from a situational understanding of DV to patterns of abusive behaviours rooted in gendered power dynamics in relationships. Coercive control creates invisible chains and a sense of fear that permeates all elements of a victim's life. Perpetrators aim to gain control and power by eroding a person's autonomy and self-esteem, acknowledging the

¹ Lesbian, gay, bisexual, trans, non-binary, intersex, queer.

disproportionate impact on women and children. Therefore, both IPV and DV include not only physical but also emotional and psychological components (including coercive control), which are not easily identified by medical staff since they require training in psychology, public policy, and ethics (Hegarty & Roberts, 1998; McGrath et al., 2022).

Violence against women and DV are matters of criminal law, violations of human rights, and forms of discrimination. Combating them is part of the European Commission's action to protect the core EU values and to ensure that the EU Charter on Fundamental Rights is upheld.²

Even more importantly, the Istanbul Convention is the first legally binding convention on violence against women in Europe. Specifically, Article 3 of the Convention defines:

- "violence against women" as a violation of human rights and a form of discrimination against women and shall mean all acts of gender-based violence that result in, or are likely to result in, physical, sexual, psychological, or economic harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or private life.
- "domestic violence": all acts of physical, sexual, psychological, or economic violence that occur within the family or domestic unit or between former or current spouses or partners, whether or not the perpetrator shares or has shared the same residence with the victim; and
- "gender-based violence against women" shall mean violence that is directed against a woman because she is a woman or that affects women disproportionately.

The European Gender Equality Institute (EIGE) defines IPV as the "physical, sexual, psychological or economic violence between current or former spouses as well as current or former partners. It constitutes a form of violence which affects women disproportionately and which is therefore distinctly gendered".³ IPV is understood as "a pattern of assaultive and coercive behaviors, including physical, sexual and psychological acts, as well as economic coercion, which adults or adolescents may use against their intimate partners without their consent. The resulting feelings of shame, fear, and helplessness lead to low levels of reporting and, subsequently, relatively few convictions "(EIGE, 2017). The definitions are provided for the purpose of the OPEP-DV project, which is to establish specialised education and training

² Violence against women and domestic violence can affect numerous of the fundamental rights enshrined in the Charter of Fundamental Rights of the European Union. These rights include the right to human dignity (Article 1), the right to life (Article 2), the prohibition of torture and inhuman or degrading treatment (Article 4), the right to freedom from discrimination, including on the grounds of sex (Article 21) and the right to access justice (Article 47).

³ It should be acknowledged that the EIGE provides also a statistical definition of IPV for researchers in the field: https://eige.europa.eu/publications-resources/thesaurus/terms/1198?language_content_entity=en

for physiotherapists and healthcare professionals and consequently contribute to integrated policy and practice in line with the EU legal and policy standards.

Although both genders can experience DV, women are still at higher risk⁴ (Australian Institute of Health and Welfare, 2018). Based on data from 2000 to 2018, the estimates have shown that 26% of women older than fifteen years have previously been subjects of physical or sexual violence from the side of their intimate partner (World Health Organization, 2021). Identifying the subject of physical or emotional DV at an early stage can save many lives. Despite this, several studies indicate that in most medical departments, patients are not asked about IPV (Clark, McKenna & Jewell, 1996; Clark et al., 2016; Ballan et al., 2017). Thus, the vital role of certain healthcare practitioners who are in a good position to identify signs of DV cannot be underestimated. Among advantageous healthcare specialisations are physicians in obstetrics (Rhodes & Levinson, 2003), gynecology (Machtinger et al., 2015), and rheumatology (Ruiz-Pérez et al., 2009); other healthcare professionals (Haag et al. 2022) and especially physiotherapists since they have frequent and long-lasting contacts with their patients which allow establishing a trustworthy relationship (Hayden et al., 2014; Alshammari et al., 2018).

At the same time, some barriers reduce the ability of healthcare staff to identify and support victims of IPV. Among them can be named: hesitation to ask sensitive questions from patients (Vasey, 1990), lack of time (Campbell et al., 2002; Ramsay et al., 2002), lack of knowledge about correct referrals (Walton et al., 2017), lack of experience or education about screening (Walton et al., 2017), patients own perception of "violence" and "abuse" (Walton et al., 2017; Sivagurunathan et al., 2019), not specified roles and responsibilities (Walton et al., 2017), fear to endanger patients (Sivagurunathan et al., 2019), feeling of discomfort of physiotherapists (Alvarez et al., 2016). One of the main barriers is a lack of knowledge among physiotherapists on identifying and correctly responding to DV cases (Chapin, Coleman & Varner, 2011; Madden et al., 2015; Alvarez et al., 2016; Pinto Dias et al., 2020). Systematic screening mechanisms are also not available. Only in Walton et al. (2017) an IPV screening tool has been suggested for physiotherapists to simplify the screening of DV.

In terms of legal and policy obligations, it should be stressed that the need for training professionals is highlighted in the Istanbul Convention. Specifically, in Article 15 – Training of professionals whereby all State Parties shall 1) provide or strengthen appropriate training for the relevant professionals dealing with victims or perpetrators, on the prevention and detection of such violence, equality between women and men, the needs and rights of victims, as well as on how to prevent secondary victimisation, and 2) encourage training on coordinated multi-agency co-operation to allow for a comprehensive and appropriate

⁴ 1 in 6 women and 1 in 16 men have previously experienced physical violence from their current or former partner in Australia (Australian Institute of Health and Welfare, 2018).

handling of referrals in cases of violence covered by the scope of the Convention.⁵ Last but not least, only a few studies are dedicated to the education and training of healthcare staff for identifying signs of DV in European countries (e.g., Warburton et al., 2006; Downie et al., 2019; Macpherson et al., 2022). All existing research has mainly been conducted based on the cases and data of the US (e.g., Chapin et al., 2011), Canada (e.g., Sprague et al., 2013), or Australia (e.g., Howard 2008). Thus, the current study aims to fill this gap by mapping the physiotherapists' knowledge, attitudes, and experience in identifying (physical and emotional) signs of DV and estimating their readiness to make correct referrals in Estonia, Greece, Spain, and Cyprus.

This will contribute to establishing a more comprehensive and integrated approach to physiotherapists' education and, as a result, provide a better quality of services to patients (i.e., gender-competent, victim-survivor-centered, trauma-informed).

1. Survey results

1.1 Method and data description

This study has been approved by the Ethics Committee of the University of Tartu (Protocol number: 371/T-8, 21.11.2022). The survey was delivered using the LimeSurvey questionnaire platform. The answers were gathered from January until April 2023 (except for Cyprus, where the survey was open until May 14, 2023, due to the lack of responses in the first round). Initially, 215 responses were collected. From them, 167 responses were applicable for further statistical analysis. The OPEP-DV project partners distributed the survey questionnaire via their networks. Potential respondents were contacted several times by the OPEP-DV project partners in each country until the saturation level was reached.

The survey questionnaire results were downloaded from the LimeSurvey platform as an Excel file, coded, and analysed using R software. The response rate was not calculated since the survey was completely anonymous (the collection of IP addresses function was disabled). However, the number of responses was compared to the statistical census for contextualisation of received results.

Table 1 shows how many physiotherapists from each country answered the survey questions. Due to the limited data availability, the number of practicing physiotherapists from Eurostat is used for 2019 and 2020. 10.73% of all Estonian physiotherapists answered the survey, which shows the best representation from all the countries under observation.

⁵ Council of Europe Convention on preventing and combating violence against women and domestic violence: <https://rm.coe.int/168008482e>

Table 1. The proportion of survey responses in the total number of participating physiotherapists* (compiled by the authors based on Eurostat)

	Number of practicing physiotherapists⁶	Number of survey responses	% of responses from the total number of physiotherapists in a country
Estonia	559	60	10.73%
Greece	8869	40	0.45%
Spain	59791	50	0.08%
Cyprus	1027	17	1.66%

*Note: the number of physiotherapists for Greece and Cyprus is from 2019; data for Estonia and Spain is from 2020.

Of the 167 responses, 35.9% are collected from Estonia, 29.9% are from Spain, 24% are from Greece, and 10.2% of respondents answered the survey in Greek and English in Cyprus.

As is visible from Figure 1, female respondents are dominating in all four countries. In Greece, 60% of respondents were female physiotherapists who answered the survey questions (see Annex 1). In Cyprus - 76.5% of respondents were female. In Estonia, the sample is most unbalanced regarding gender - 90% female respondents. 72% of respondents were female in Spain.

According to the World Physiotherapy Annual Membership Census: Europe region (2020), 63% of physiotherapists in the world and 67% of practicing physiotherapists in Europe⁷ are women, which aligns with the survey results. Three countries of the European region – Estonia, Hungary, and Slovenia - show the highest number of female physiotherapists (World Physiotherapy Annual Membership Census: Europe region, 2020). Thus, gender results for Estonia, which displays the highest number of female physiotherapists among the four investigated countries, adequately represent the actual situation.

⁶ Eurostat:

https://ec.europa.eu/eurostat/databrowser/view/HLTH_RS_PRS1_custom_3121608/bookmark/table?lang=en&bookmarkId=b273df46-d28b-4cde-b48a-c09db18af6bf

⁷ For definition of the Europe region, please, visit, page 11: <https://world.physio/sites/default/files/2021-02/AMC2020-Europe.pdf>



Figure 1. Distribution of male and female physiotherapists between countries.

The average age of the physiotherapists who participated in the survey is 34 years in Estonia, 37 in Greece, 38 in Cyprus, and 43 in Spain (see Table 2). The average professional experience varies according to the average age – 10 years of average professional experience in Estonia, 11 years in Greece, 17 years in Cyprus, and 19 years for physiotherapists in Spain.

Respondents reported working mainly in private practice or private medical centers in Greece, Cyprus, and Spain (29, 14, and 29 people, respectively). However, the situation is the opposite in Estonia since 51 respondents work in public clinics or hospitals, and only ten reported being employed in private medical centers.

Table 2. General description of the responses by countries

	Greece	Cyprus	Estonia	Spain
Total number of responses	40	17	60	50
Male physiotherapists, no. of responses	16	4	6	14
Female physiotherapists, no. of responses	24	13	54	36
The average age of participants, years	37	38	34	43
Average professional experience, years	11	17	10	19
Private practice/private medical centre, no. of responses	29	14	10	29
Public clinic/hospital, no. of responses	14	1	51	19
Other type of organisation, no. of responses	-	2	-	2
Have you ever suspected domestic abuse of at least one of your patients? %				
Yes	57.5	52.9	50.0	48.0
No	42.5	47.1	50.0	52.0
Have you ever made referrals for patients you have suspected? %				
Yes	30.0	17.6	21.7	40.0

	Greece	Cyprus	Estonia	Spain
No	70.0	82.4	78.3	60.0
Service providers for previous referrals, no. of responses:				
Police	12	0	5	2
Women's Support Services (WSS)/Support Centre	5	0	5	7
Court of guard/ Violence against Women or Duty Court	3	0	0	0
Victim support service	3	2	6	6
Participants received professional training(s) on identifying domestic violence, %	5.0	23.5	10.0	12.0
Topics covered in previous trainings, no. of responses:				
Risk factors	2	3	5	3
Referrals	0	5	5	1
Legislation	1	2	3	5
Guidelines	0	4	4	2
Professional training has been received at, no. of responses:				
University/College (higher education)	2	5	4	3
Vocational school/College (vocational education)	0	1	0	0
Continuing education	2	2	4	3

In Greece and Cyprus, physiotherapists work in the following specializations:⁸

- Neurology
- Musculoskeletal system
- Chronic diseases
- Cardiorespiratory diseases
- Autoimmune diseases
- Children

The following specializations are applicable in Estonia and Spain:

- Neurology
- Musculoskeletal system
- Internal diseases
- Children

In all four countries, the musculoskeletal system is most frequently marked by physiotherapists answering the survey, with 67% in Spain, 38% of respondents in Greece, 37%

⁸ This classification has been applied in consultation with OPEP-DV project partners who closely work with practicing physiotherapists in the countries.

in Estonia, and 34% in Cyprus. The second popular specialization of physiotherapists is neurology, with 27% of respondents in Estonia, 24% in Spain, 23% in Greece, and 17% in Cyprus (see Figure 2).

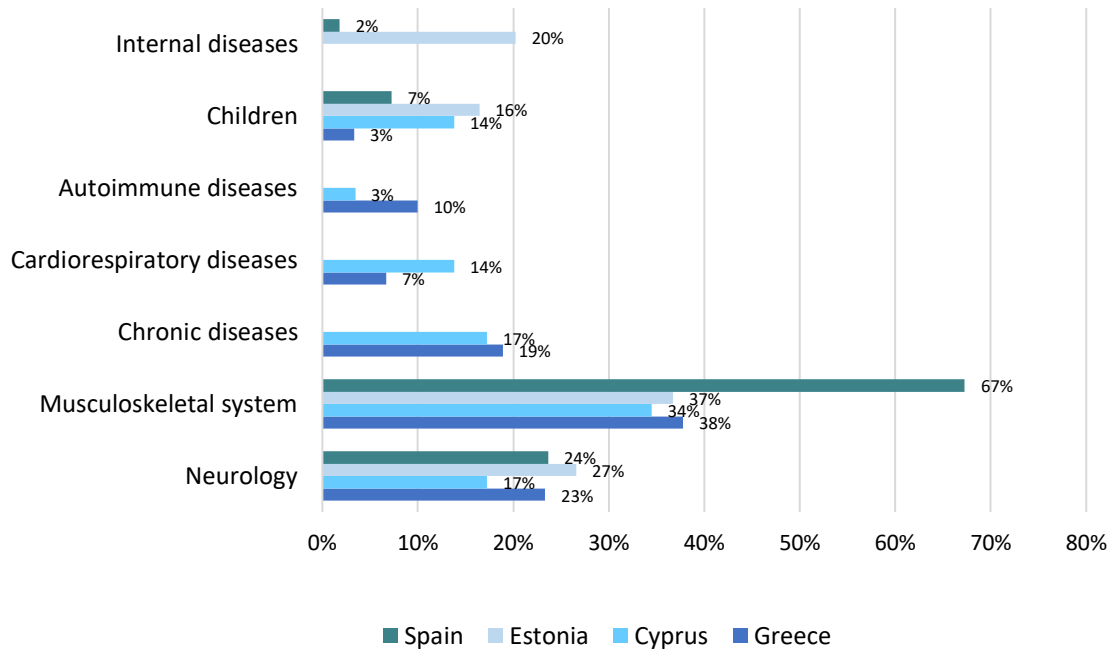


Figure 2. Specializations in which physiotherapists work

1.2. Expression of opinion and attitudes

Several survey questions required participants to choose whether they agree with the statements on a Likert scale from 1 to 6, where 1 is "strongly disagree" and 6 is "strongly agree".

Figure 3 shows the distribution of answers to the question of how physiotherapists would estimate their role in identifying DV. In all four countries, respondents mainly strongly agree or rather agree that their role is important. In Greece, 15% rather agree, 35% agree, and 50% of physiotherapists who responded to the survey strongly agree that their role is important.

In Cyprus, responses are more diverse. Some participants (5.9% in each category) disagree, strongly disagree, or rather disagree with the statement. 17.6% rather agree, 35.3% agree, and 29.4% strongly agree. 18.4% of Estonian physiotherapists disagree and rather disagree that their role in identifying DV signs is important, 31.7% rather agree, 33.3% agree, and only 16.7% strongly agree.

More than half (54%) of Spanish physiotherapists strongly agree that their role is crucial, 38% agree, 6% rather agree, and 2% strongly disagree. In total, those respondents who tend to agree with the statement add up to 98%. To compare with the findings in previous studies, 74% of surveyed orthopaedic staff in the UK felt it was important/very important to ask about IPV (Downie et al., 2019), which is lower than in the current study.

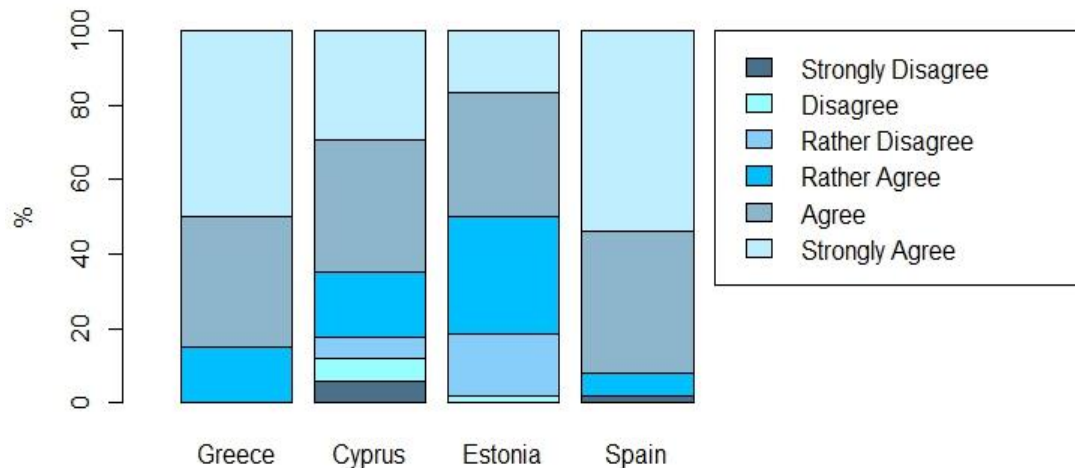


Figure 3. The role of physiotherapists in identifying DV

The notion that education on how to identify DV should be integrated into training programs for physiotherapists has generally been confirmed by the respondents. All participants from Greece, 82.4% from Cyprus, 84.9% from Estonia, and 96% from Spain rather agree, agree, and strongly agree with the latter statement (see Figure 4).

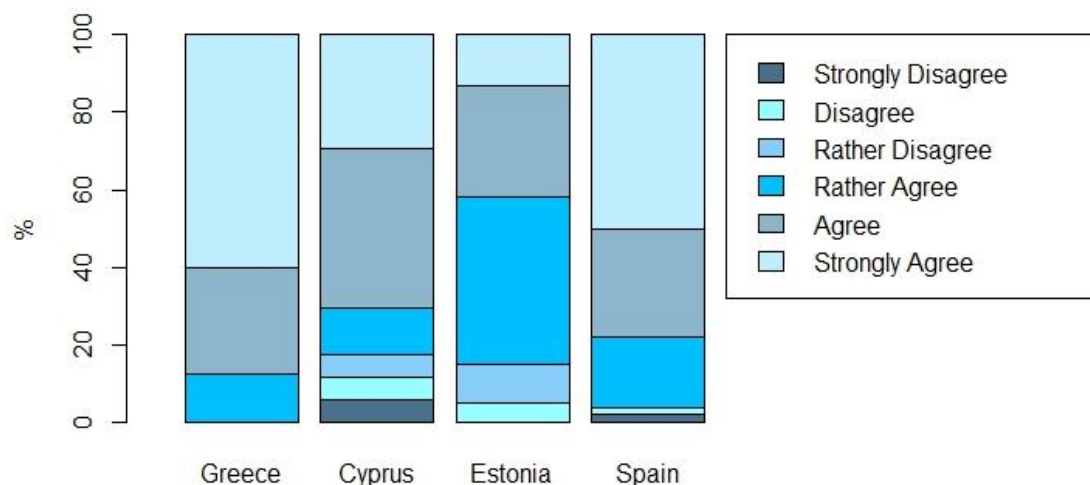


Figure 4. Education on how to identify domestic violence should be integrated into training programs for physiotherapists

22.5% of physiotherapists from Greece strongly agree that they can recognize signs of physical DV, 32.5% agree, 30% rather agree, 12.5% rather disagree, and 2.5% disagree (see Figure 5).

In Cyprus, the proportion of physiotherapists who agree with the statement (only 5.9% rather disagree) is higher than in Greece, which also corresponds with a higher average experience in Cyprus compared to Greece. Estonia displays the most significant number of physiotherapists who rather disagree (23.3%) or disagree (6.7%) that they can recognize signs of physical DV. The Estonian sample is the youngest in terms of average age, and it is also the least experienced. There are 10% of surveyed physiotherapists in Spain who, to some extent, disagree, and 90% of those who, to some extent, agree that they can recognise signs of physical DV.

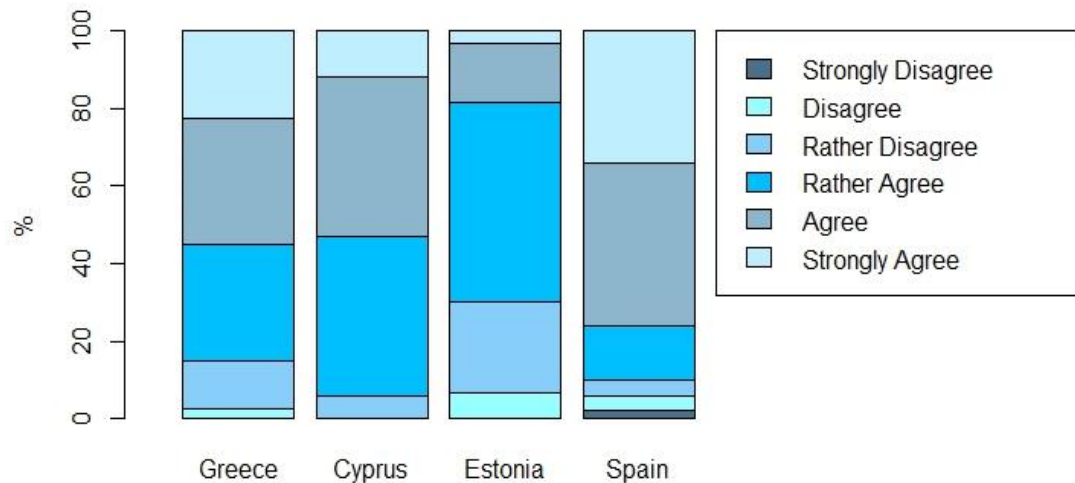


Figure 5. Recognition of signs of physical DV

Answering the question regarding identifying signs of emotional DV (see Figure 6), physiotherapists in all investigated countries are generally less confident (the proportion of those who disagree is more significant compared to the question on physical signs). This change is more noticeable in particular in Estonia. The proportion of Estonian physiotherapists who strongly disagree, disagree, or rather disagree is 58.3% against 41.7% who agree to a certain extent. This result might signal that there are gaps in education/training for physiotherapists in identifying signs of emotional (psychological) DV in Estonia.

Moreover, previous studies confirm these findings. For example, Macpherson et al. (2022) revealed that the physiotherapy curriculum has shortcomings in ethics competencies and knowledge of psychology. Physiotherapy students would instead rely on consultation with psychologists rather than approaching DV victims in personal conversation as an initial step. In addition, McGrath et al. (2022) suggest that mental health topics must be introduced as part of physiotherapy training.

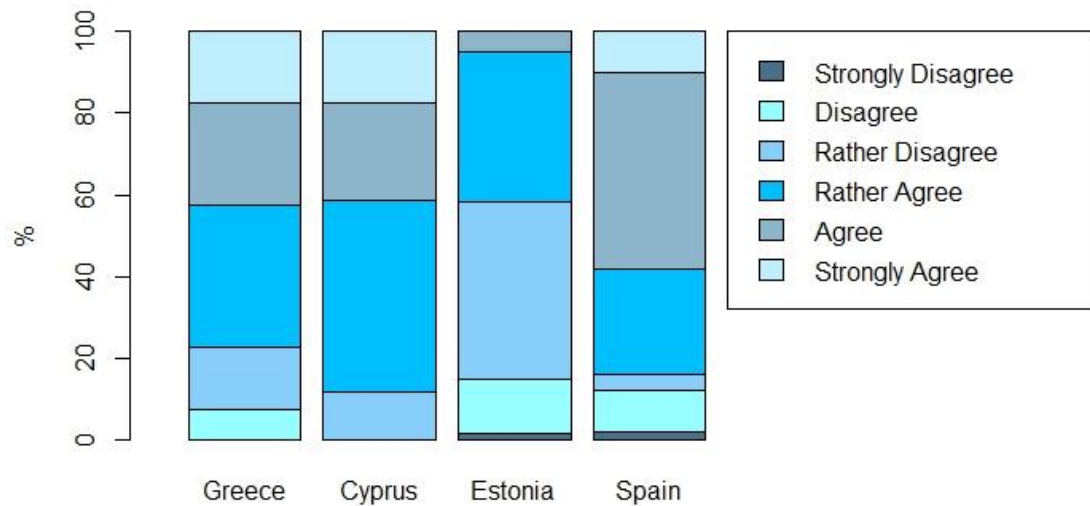


Figure 6. Recognition of signs of emotional DV

In Figure 7, 31.7% of Estonian physiotherapists do not agree that they know the ways how to ask DV victims, which will minimize their negation to answer. It is the highest proportion of respondents compared to Greece, with 12.5% of physiotherapists who disagree or rather disagree, Cyprus with 5.9% who strongly disagree, and 24% in Spain who cannot positively evaluate their ability to communicate with DV victims in the way that will minimize their negation to answer.

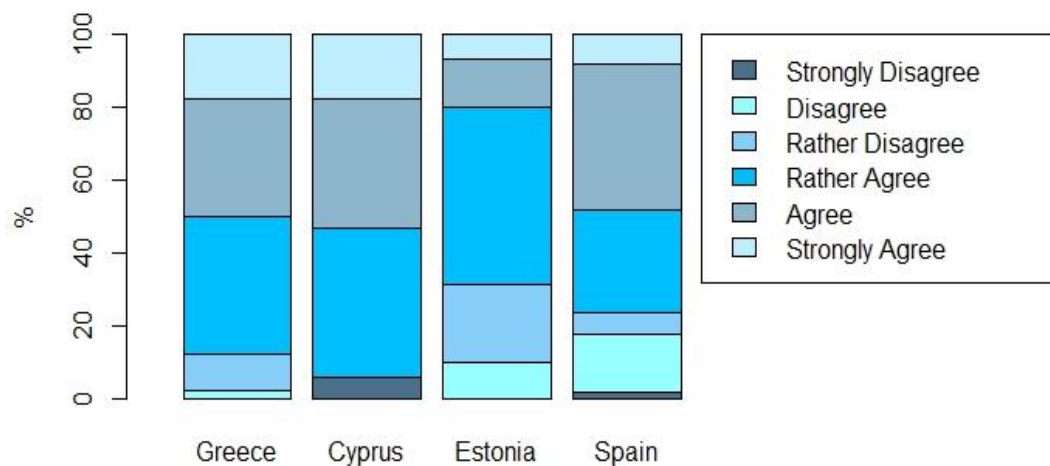


Figure 7. Awareness of physiotherapists about the ways how to ask DV victims to minimize their negation to answer

2.5% of all respondents in Greece disagree that they know strategies that can be used to encourage DV victims to seek help (see Figure 8). The other 7.5% rather disagree, 45% rather agree, 25% agree, and 20% strongly agree. So, the majority (90%) of respondents from Greece tend to generally agree that they know strategies to encourage DV victims to seek help. In Cyprus, 5.9% of respondents are not confident that they have strategies to encourage DV

victims to seek help. In Spain, 12% of respondents disagreed, and 88% agreed that they possess strategies to encourage DV victims to seek help. In Estonia, 1.6% strongly disagree, 6.7% disagree, and 8.3% rather disagree with the statement in Figure 8. This is again the biggest proportion (16.6%) of those who generally disagree with the statement among all countries.

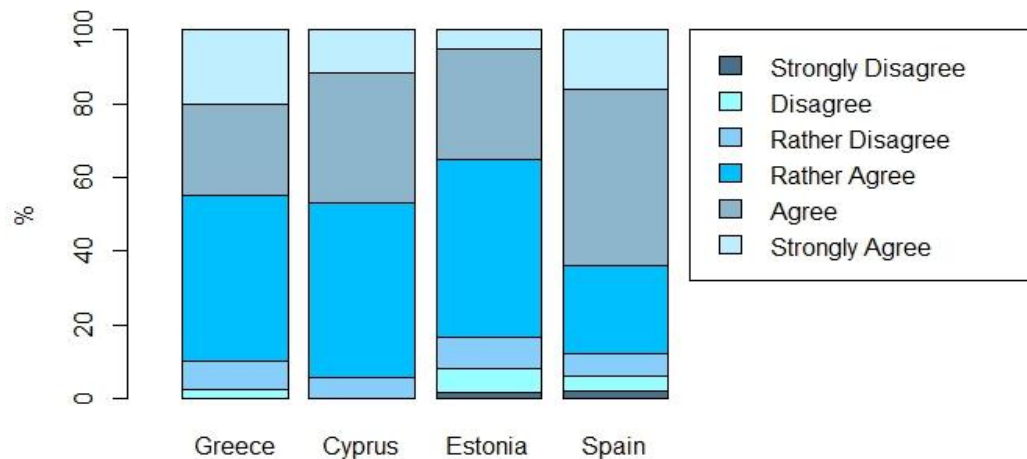


Figure 8. Awareness of physiotherapists about the strategies to encourage DV victims to seek help

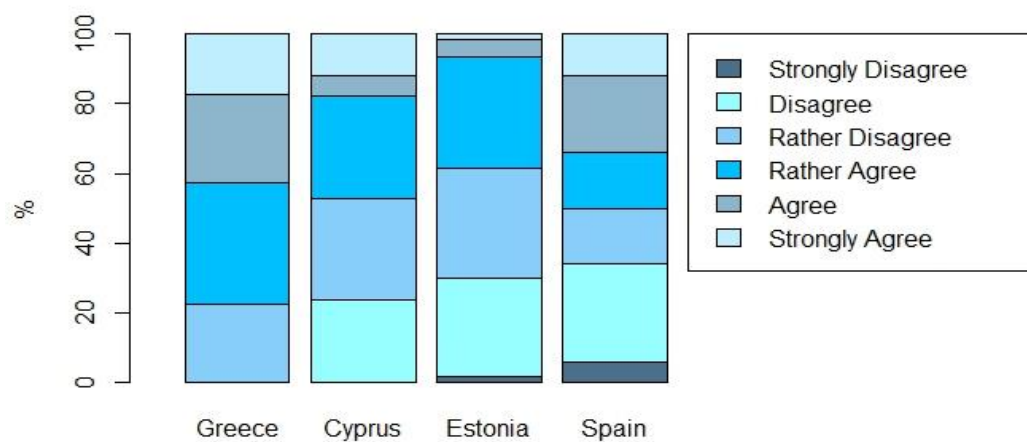


Figure 9. Access to information on how to respond to DV by physiotherapists

In Figure 9, the results of the question on accessibility to information on how to respond to DV are shown. 22.5% of respondents from Greece reported that they rather disagree that they have access to this information. 35%, 25%, and 17.5% of respondents, respectively, rather agree, agree, or strongly agree that they have access to the information on how to respond to DV.

In Cyprus, 23.5% disagree, 29.4% rather disagree, 29.4% rather agree, 5.9% agree, and 11.8% strongly agree with the statement regarding accessibility to the information. The proportion of those physiotherapists who disagree is the highest in Estonia: 1.7% strongly disagree,

28.3% disagree, 31.7% rather disagree, which in total provides 61.7% who generally do not have access to necessary information on how to respond to DV. In comparison - there are 50% of respondents who generally disagree with the statement; the other half of the sample either strongly agree (12%), agree (22%), or rather agree (16%) in Spain.

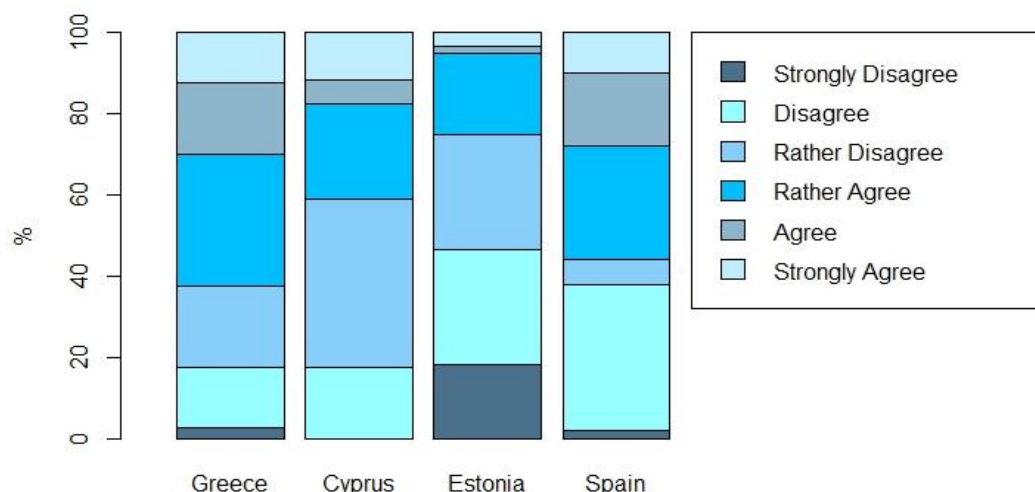


Figure 10. Confidence in making appropriate referrals for victims by physiotherapists

The proportion of respondents who are not confident in making appropriate referrals for DV victims is the highest in Estonia, with 74.9% in total. Compared with the other three countries – 37.5% of physiotherapists in Greece, 58.8% in Cyprus, and 44% in Spain disagree to some extent that they feel confident in making appropriate referrals for DV victims (see Figure 10).

1.3. Practical experience in identifying DV

Sivagurunathan et al. (2019) examined 189 physiotherapists from Canada and the US and reported 66% of previous experience of physical therapists and occupational therapists with IPV. The current study surveyed physiotherapists from the EU countries who were asked if they ever suspected DV of at least one of their patients (see Figure 11).

57% of physiotherapists in Greece, 52.9% in Cyprus, 50% in Estonia, and 48% in Spain reported that they suspected abuse of at least one of their patients. However, only 30% of physiotherapists in Greece, 17.6% in Cyprus, 21.7% in Estonia, and 40% in Spain made referrals for patients they have suspected (see Figure 12). Downie et al. (2019), who also conducted a questionnaire with orthopaedic staff in the UK, discovered that 52% of respondents revealed IPV of at least one of their patients, but only 24% knew about the available support. These results are in line with the findings of this study.



Figure 11. Suspicion of DV of at least one of the patients

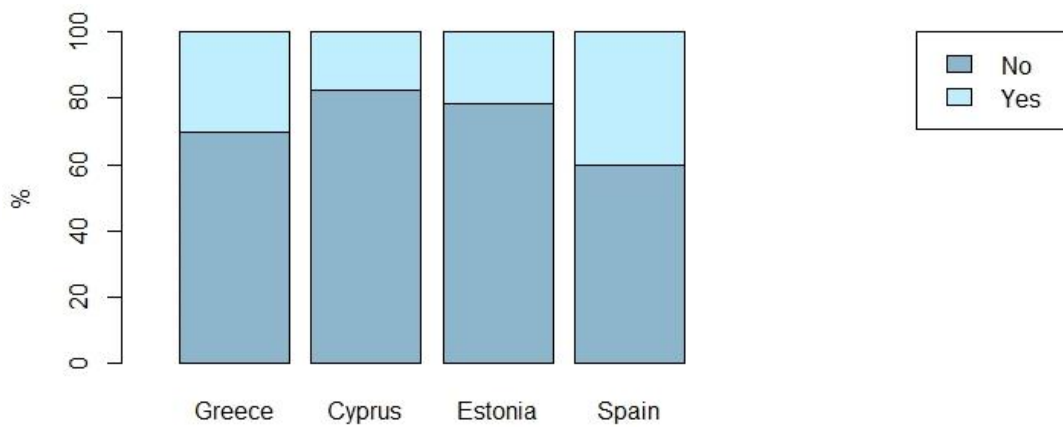


Figure 12. Previous referrals for suspected patients

According to Howard (2008), physiotherapists quite often lack the confidence to investigate cases, although they suspect that injuries are the result of DV.

Physiotherapists in Greece made referrals mainly to the police (12 people reported) but also to Women's Support Services (WSS)/Support Centre (5 people), Court of Guard/ Violence against Women or Duty Court (3 people), and Victim support service (3 people) (see Figure 13).

In Cyprus, reporting has been made to the Victim support service (2 people). In Estonia, physiotherapists reported to the police (5 people), Women's Support Services (WSS)/Support Centre (5 people), and Victim Support Service (6 people). In Spain, the police (2 people), Women's Support Services (WSS)/Support Centre (7 people), and Victim Support Service (6 people) were contacted to inform them about DV cases.

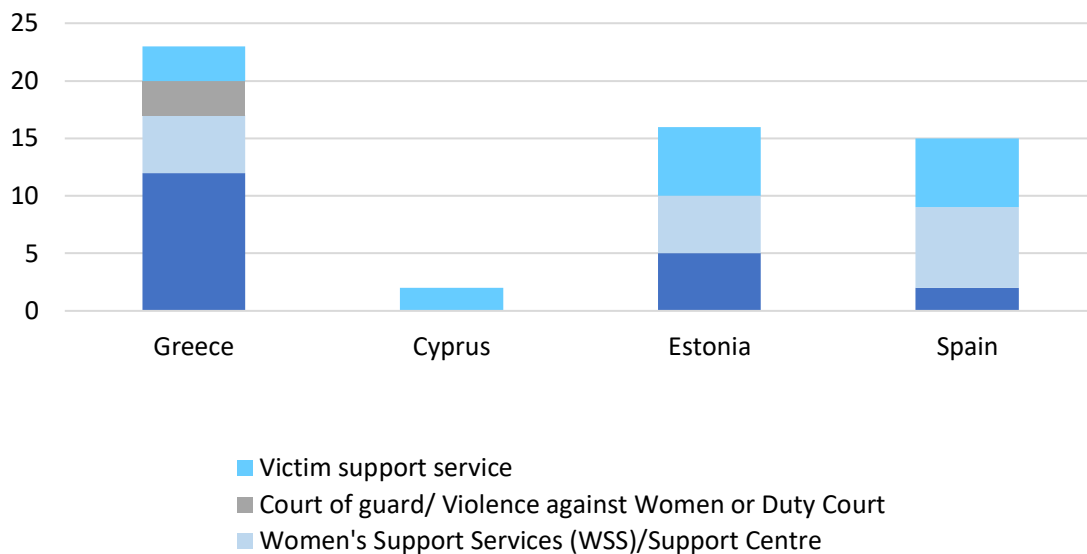


Figure 13. Service providers for previous referrals, number of people reported

1.4. Education and training on DV

According to Madden et al. (2015) and Chapin, Coleman & Varner (2011), professional training for physiotherapists leads to a better ability to identify IPV. IPV education should be included in training programs for physiotherapists.

Figure 14 shows that only 5% of respondents from Greece reported receiving professional training(s) on identifying DV. The highest proportion is in Cyprus since 23.5% of survey respondents have previously been educated on identifying DV, 10% of Estonian and 12% of Spanish physiotherapists received professional training(s) on identifying DV.



Figure 14. Physiotherapists who received professional training(s) on identifying DV

Among those who received previous training, 3 respondents reported studying risk factors

and legislation in Greece (see Figure 15). In Cyprus, referrals have been taught to 5 respondents, guidelines to 4 people, risk factors to 3 respondents, and legislation to 2 respondents.

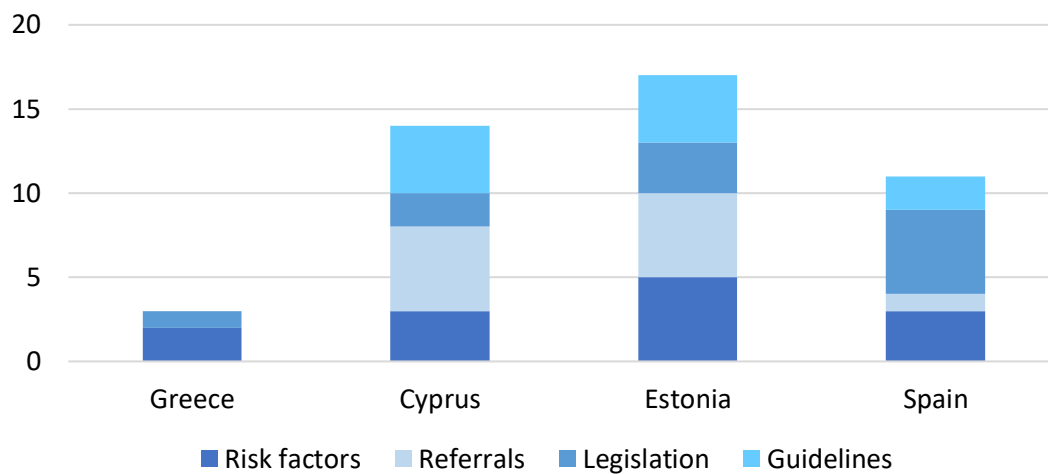


Figure 15. Topics that have been addressed in previous professional training(s), the number of respondents reported

In Estonia, risk factors and referrals have been learned by 5 respondents. 4 respondents reported that they studied guidelines, and 3 respondents - legislation. In Spain, 5 respondents received education on legislation, 3 respondents studied risk factors, 2 respondents guidelines, and 1 respondent reported training on referrals.

Figure 16 illustrates institutions where professional training(s) on identifying DV has been received. Across all four countries, respondents mainly received their training on DV in higher education institutions – universities or colleges (with 2 respondents from Greece, 5 from Cyprus, 4 from Estonia, and 3 from Spain). Some respondents reported that they received their training via continuing education (2 respondents each in Greece and Cyprus, 4 in Estonia, and 3 in Spain). One respondent in Cyprus reported vocational school or college as an institution where professional training(s) on identifying DV has been received.

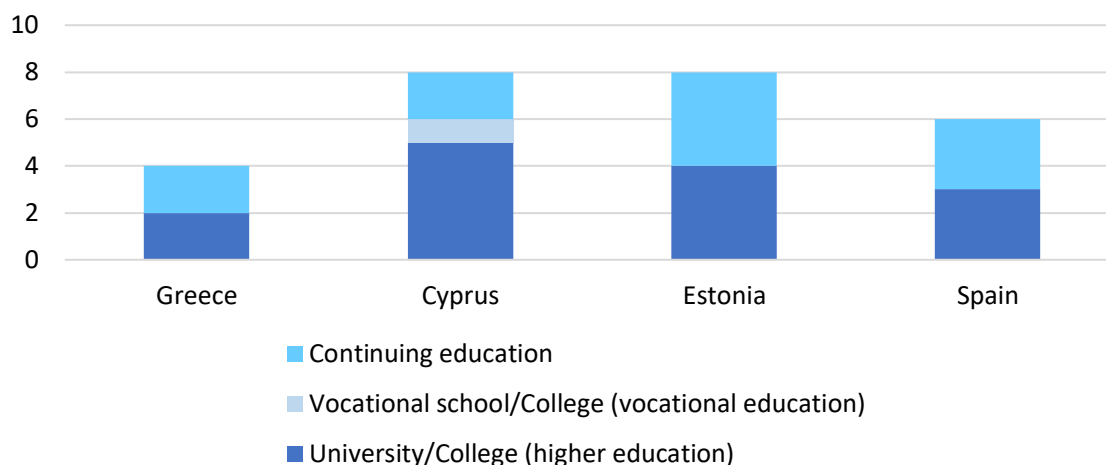


Figure 16. Institutions where professional training(s) on identifying domestic violence has been received, the number of people reported

Previous studies have shown that in addition to physiotherapists' lack of skills, their attitudes and beliefs about DV can hinder their ability to properly serve victims of DV (Chapin, Coleman & Varner, 2011; Madden et al., 2015). For example, Sivagurunathan et al. (2019) discovered that such factors as gender, country of practice, experience with IPV, professional training, and other factors determine the beliefs and attitudes of physiotherapists about IPV.

In comparison to previous studies, this research reveals that age, experience, and physiotherapeutic specialty affect physiotherapists' ability to identify DV cases. More experienced physiotherapists who work in specialties "Children" and "Chronic diseases" are more likely to suspect DV in at least one of their patients. Suppose a physiotherapist works in the specialization "Children". In that case, it is 25% more likely, and if they work in the domain of "Chronic diseases", it is 34% more likely to suspect DV in at least one of their patients (see Table 3).

Table 3. Logistic regression analysis of predictors of domestic abuse of at least one of the patients

Variables	Coefficient	p-value	Average marginal effects
Intercept	-1.955e+00 (9.676e-01)	0.0434*	-0.42
Country of origin:			
Cyprus	-4.901e-02 (7.402e-01)	0.9472	-0.01
Estonia	-1.653e-01 (6.237e-01)	0.7910	-0.04
Spain	-3.023e-01 (5.551e-01)	0.5860	-0.06
gender (female)	1.718e-01 (4.273e-01)	0.6877	0.04

Variables	Coefficient	p-value	Average marginal effects
training	4.373e-01 (8.472e-01)	0.6057	0.09
age	3.708e-02 (1.728e-02)	0.0319*	0.008
Place of work:			
private (yes/no)	6.522e-04 (5.717e-01)	0.9991	0.00
public (yes/no)	2.819e-01 (5.864e-01)	0.6307	0.06
Place of training:			
university	-1.076e+00 (7.424e-01)	0.1473	-0.23
vocational	-1.223e+01 (8.827e+02)	0.9889	-2.61
continuing education	3.463e-01 (9.822e-01)	0.7244	0.07
Physiotherapeutic specialties:			
children	1.150e+00 (5.561e-01)	0.0386*	0.25
neurology	2.149e-01 (3.843e-01)	0.5760	0.05
musculoskeletal	2.641e-01 (3.961e-01)	0.5048	0.06
chronic diseases	1.586e+00 (7.661e-01)	0.0384*	0.34
cardiorespiratory diseases	-5.820e-01 (9.333e-01)	0.5329	-0.12
autoimmune diseases	-8.589e-01 (9.752e-01)	0.3785	-0.18
internal diseases	1.721e-01 (6.042e-01)	0.7758	0.04
Pseudo R²	0.11		
N	167		

Note: logistic regression coefficients with standard errors in parentheses. The dependent variable is suspecting domestic abuse of at least one of the patients (1 = yes, 0 = no).

*** $p \leq 0.001$, ** $p \leq 0.01$, * $p \leq 0.05$

McFadden's Pseudo R-squared has been calculated to measure the model's goodness of fit. $R^2 = 0.11$ means that the model explains only 11% of the variation in the data.

A comparison of those physiotherapists who suspected DV in at least one of their patients and did not suspect by countries is made with a *Chi-square* test. The null hypothesis assumption is that there is no difference between those physiotherapists who suspected and did not suspect DV in at least one of their patients. Since the p -value is 0.8279 (p -value > 0.05),

the null hypothesis cannot be rejected, which means that the answer to this question by physiotherapists from different countries does not vary.

Both *t*-test (p -value = 0.3524) and Chi-square test (p -value = 0.4464) confirm that there is no difference between male and female physiotherapist in answering the question on suspecting DV of at least one of their patients as well as no gender-based difference for making referrals (p -value = 0.843 and p -value = 1 for *t*-test and *Chi-square* test respectively).

A comparison of the mean experience of physiotherapists who suspected DV in at least one of their patients and did not suspect it the *t*-test revealed that the average professional experience of the former group is 15.6 years and the latter group is 11.4 years. This difference is statistically significant with a p -value of 0.007282, meaning that professional experience significantly influences the ability of physiotherapists to identify DV cases.

Years of professional experience also affect physiotherapists' decisions to make referrals for suspected patients. There is a statistically significant difference (*t*-test p -value = 0.0007958) in the mean professional experience of those physiotherapists who made referrals for patients and who have never made them.

Summary

Domestic violence (DV) is a worldwide issue that affects people with different social statuses, ages, and gender. Given the high prevalence of DV in the population, healthcare staff must be aware of how to identify and correctly refer DV cases. While the education of physiotherapists on DV has received considerable attention in the USA, Canada, and Australia, it is not well investigated in European countries. Thus, this study is motivated by the lack of knowledge of physiotherapeutic healthcare staff on identifying and correctly responding to DV in European countries.

With the help of an online survey questionnaire, the physiotherapists' knowledge, attitudes, and experience in identifying (physical and emotional) signs of DV, as well as their readiness to make correct referrals in Estonia, Greece, Spain, and Cyprus, have been mapped.

Most respondents in all four countries are female physiotherapists representing mainly musculoskeletal physiotherapeutic specialization. Respondents mainly work in private practice or medical centres in Greece, Cyprus, and Spain. In Estonia, the majority work in public clinics or hospitals.

The results that have been statistically analysed (applying descriptive statistics and logistic regression) show that physiotherapists in all investigated countries are generally less confident in identifying signs of emotional than physical DV. This is especially noticeable in Estonia. Moreover, approximately half of the respondents have previously suspected abuse of at least one of their patients; however, not all of them made referrals for patients whom they suspected. Age, experience, and specialization affect physiotherapists' ability to identify DV cases. More experienced physiotherapists who work in specialties "Children" and "Chronic diseases" are more likely to suspect DV in at least one of their patients. Suppose a physiotherapist works in the specialization "Children". In that case, it is 25% more likely, and if they work in the specialization "Chronic diseases", it is 34% more likely to suspect DV in at least one of their patients. Also, years of professional experience positively influence physiotherapists' decision to make referrals for patients they have suspected.

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Annex 1. Summary of the literature review on domestic violence and physiotherapy

Topic	Methods	Author	Country
Believes and attitudes of hand therapists about IPV	Survey questionnaire, descriptive statistics plus Mann-Whitney U analysis	Sivagurunathan et al. (2019)	Canada and the United States
Physiotherapy training	Qualitative research approach	McGrath et al. (2022)	-
Physiotherapy training	Survey analysis	Chapin et al. (2011)	USA
Knowledge, attitudes, and practices of IPV, training	Survey questionnaire	Madden et al. (2015)	Canada
Domestic violence identification and education	Survey questionnaire	Clark, McKenna, Jewell (1996)	USA
Violence against old people	Scope review	Pinto Dias et al. (2020)	-
IPV screening	Literature review	Walton et al. (2015)	-
IPV awareness	Survey questionnaire	Downie et al. (2019)	UK
Ethical and psychological preparedness of physiotherapists to deal with DV victims	Survey questionnaire and statistical analysis	Macpherson et al. (2022)	Europe
Domestic violence screening and training	Questionnaire and interviews	Howard (2008)	Australia
Screening women for DV	Literature review	Ramsay et al. (2002)	-
IPV screening tool	Survey and expert review	Walton et al. (2017)	USA

Source: compiled by the authors.

Annex 2. Survey questions on physiotherapy and domestic violence

I provide my consent for participating in this survey and give permission to use my answers in further research, analysis and publications

Expression of opinion

For each question, please rate the extent to which you agree with the following statements:

	Strongly Disagree	Disagree	Rather Disagree	Rather Agree	Agree	Strongly Agree
1. The role of physiotherapists in identifying domestic violence is important						
2. Education on how to identify domestic violence should be integrated into training programs for physiotherapists						
3. I believe that I can recognize signs of physical domestic violence						
4. I believe that I can recognize signs of emotional domestic violence						
5. There are ways I can ask victims that will minimize their negation to answer						
6. There are strategies I can use to encourage domestic violence victims to seek help						
7. I have access to information on how to respond to domestic violence						
8. I feel confident that I can make appropriate referrals for victims						

Practical experience

9. Have you ever suspected domestic abuse of at least one of your patients?

Yes No

10. Have you ever made referrals for patients you have suspected?

Yes No

11. If you have made referrals in the past, to which service providers have you done so?

Police

Women's Support Services (WSS)/Support Centre

Court of Guard/ Violence against Women or Duty Court

Victim support service

Other

Please specify _____

Education and training on domestic violence

12. Have you received professional training(s) on identifying domestic violence?

Yes No

13. If yes, what topics have been addressed in these previous professional training(s)?

Risk factors

Referrals

Legislation

Guidelines

Other

Please specify _____

14. Where have you received training?

University/College (higher education)

Vocational school/College (vocational education)

Continuing education

Other

Please specify _____

Your background

15. In which medical institution do you work?

Private practice/private medical centre

Public clinic/hospital

Other

Please specify _____

16. Please mark in which physiotherapeutic specialty you work

Neuro

Skeletal muscle system

Internal diseases

Chronic diseases (Greece and Cyprus)

Cardiorespiratory diseases (Greece and Cyprus)

Autoimmune diseases (Greece and Cyprus)

Children

Other

Please specify _____

17. Please indicate how many years of professional experience you have

18. Please indicate your age

19. Please indicate your gender

Male

Female

Other