

# Anti-doping knowledge and educational needs of Finnish pharmacists

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# Conflict of interest

**None.**

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# Background

- Doping in organised and recreational sports is a public health issue in the EU
  - Doping prevention
  - Harm reduction
  - Health promotion
    - Doping control
    - Anti-doping education
    - Research
    - Raising population awareness

# Anti-doping actors in Finland

**Finnish Center for Integrity in  
Sports FINCIS**

<https://suek.fi/>

**A-Clinic Foundation**

<https://a-klinikkasaatio.fi/>

# Aim of the study

- Pharmacists' self-assessed knowledge about doping and anti-doping activities
- The effect of pharmacists' and pharmacy characteristics on the self-assessed knowledge
- Pharmacists' educational needs

# Methods

- Survey based partly on Doping E-learning Tools (DELTS) project's survey for physicians
- A national cross-sectional online survey
  - 26 questions (12 obligatory)
  - Likert scale questions

# Characteristics of the respondents

- N = 246, mean age  $43 \pm 10$  years
- 94% female
- 68% working in the community pharmacy
- Age and work experience in the pharmacy divided equally
- 68% had encountered doping user groups as a pharmacy customers
- 94% had no anti-doping related updating education

<b>Knowledge on health counselling</b>	<b>Poor or rather poor</b>	<b>Neither poor or good</b>	<b>Rather good or good</b>
<b>Health and disease in general</b>	<b>&lt; 1 %</b>	<b>7 %</b>	<b>93 %</b>
<b>Quitting smoking</b>	<b>1 %</b>	<b>10 %</b>	<b>89 %</b>
<b>Moderate alcohol consumption</b>	<b>5 %</b>	<b>21 %</b>	<b>74 %</b>
<b>Nutritional supplements and natural products</b>	<b>21 %</b>	<b>32 %</b>	<b>47 %</b>
<b>Drug withdrawal</b>	<b>50 %</b>	<b>35 %</b>	<b>14 %</b>
<b>Prohibited substances and methods in sport</b>	<b>55 %</b>	<b>25 %</b>	<b>20 %</b>
<b>Doping in recreational sports</b>	<b>76 %</b>	<b>20 %</b>	<b>4 %</b>



# Knowledge on anti-doping

- **Counselling**

- Poor or rather poor  
65-85%

Different motives on doping usage

Symptoms and recognition of doping usage

Differences in doping in sport and recreational sports

Athlete anti-doping counselling and therapeutic use exemption policy

Communication and health care guidance with doping users

Directing the doping user to health care services

# Knowledge on anti-doping

- **Counselling**

- Poor or rather poor  
65-85%

- **Pharmacology of doping agents**

- Poor or rather poor  
39-70%

Substances listed as doping agents

Performance enhancing effects of doping agents

Doping agents' chronic adverse effects

Doping agents' mechanism of action

Doping agents' acute adverse effects

Different types of doping agent usage

Doping risks of nutritional supplements and natural products

Doping agents' interactions with other medicines

# Knowledge on anti-doping

- **Counselling**

- Poor or rather poor  
65-85%

- **Pharmacology of doping agents**

- Poor or rather poor  
39-70%

- **Information searching and sources**

- Poor or rather poor  
47-72%

Reliable anti-doping information sources

Evaluating the scientific basis of doping information in the internet and online bulletin boards

Information searching about athlete anti-doping counselling & therapeutic use exemption

Anti-doping actors in Finland

Information searching about anti-doping in recreational sports

# The effect of work experience

- **Different motives of doping usage**
  - Better knowledge when work experience less than 10 years ( $p < 0.01$ )
- **Anti-doping actors in Finland**
  - Lower knowledge when work experience was more than 20 years compared to work experience less than 10 years ( $p = 0.03$ )
- **Evaluating of scientific basis of doping information**
  - Better when work experience was less than 10 years ( $p < 0.01$ )

<b>Willingness to participate in anti-doping activities</b>	<b>Poor or rather poor</b>	<b>Neither poor or good</b>	<b>Rather good or good</b>
<b>General health promotion</b>	12 %	25 %	63 %
<b>Promoting values of clean exercise*</b>	18 %	26 %	56 %
<b>Anti-doping counselling for athletes</b>	23 %	29 %	43 %
<b>Preventing anti-doping activities</b>	26 %	33 %	41 %
<b>Anti-doping related harm reduction</b>	30 %	31 %	39 %
<b>Therapeutic use exemption (TUE) policy*</b>	42 %	25 %	33 %
<b>Clean needle and syringe service</b>	48 %	26 %	26 %
<b>Doping testing</b>	63 %	18 %	19 %

# Summary

- **The first national survey of its kind in Finland**
- **Pharmacists are willing to participate anti-doping activities**
- **Educational needs in many areas**
  - Directing the doping users to health care services
  - Doping agents' interactions with other medicines
  - Information searching about anti-doping in recreational sports

# Recommendations

- **Anti-doping education for pharmacists**
  - Sports and exercise medicine
  - Sports pharmacy
- **Future research in social pharmacy**
  - Effectiveness of education
  - Support of pharmacies' medication counselling tools
  - Usability of anti-doping information sources
  - Prevention and harm reduction of drug abuse









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## Anti-doping knowledge and educational needs of Finnish pharmacists

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# Thank you!

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