Comorbidities and Gambling: new research directions

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Comorbidities concept in gambling

- Short definition: the level that gamblers present other mental pathology (p.e. Ciarrocchi 2002).

- Large definition: presence of two or more other pathologies (p.e. Petry 2005).
  - This view can assume two ways:
    - Current comorbidity. Simultaneous pathologies
    - Lifetime comorbidity. Once in lifetime pathologies

- Very large definition: to see not only the body morbidities but in the sense of "Health" defined by WHO. (Lopes, 2006, 2008).
  - To understand de health problems into the ecosystem where the gambler lives.

Comorbidities in gambling: something largely known

- One reason for having high numbers of comorbidities is due to the large number of gambler addicts in any country.
- Almost every research on gambling comorbidities found other pathologies, mainly from “Psy” fields.
- Demographically in general the less protect groups are much more exposed to gambling addiction. As consequence social pathologies are very present too.

One synthesis of gambling comorbidities



Incidence by country

As affect millions of persons is enough for making appear all kind of comorbidities

Organized by Henrique Lopes , 2006 from the works of Petry, Derevensky, and others.

Country	Prevalence Level 3 by 100 inhabitants		
	Sample	Current	Lifetime
USA			
Comissão da revisão da política nacional em relação ao jogo (1976)	1.749	n.s	0.8
Shaffer, Hall, & Vander Bilt (1999) meta-análise	79.037	1.1	1.6
Gerstein et al. (1999)	2.417	0.1	0.8
Welte et al. (2001)	2.638	1.9	4.0
Canadá			
Bland et al. (1993)	7.214	0.2	0.4
Ladouceur (1996)	Entre 801-1.200	n.s.	Entre 0.8-1.7
Austrália			
Dickerson et al. (1996)	2.744	n.s.	1.2
Comissão de produtividade	10.600	2.1	n.s.
Hong Kong			
Chen et al. (1993)	7.229	n.s.	1.6
Wong & So (2003)		4.0	1.8
South Korea			
Lee et al. (1990)	3.134	n.s.	1.0
New Zealand			
Abbott & Volberg (2000)	6.452	1.9	1.0
Volberg & Abbott (1994)	4.053	n.s.	2.7 (0.5)
Taiwan			
Hwu et al. (1989)	11.004	n.s.	4.4-6.0

Organized by Henrique Lopes , 2006 from the works of Petry, Derevensky, and others.

	Prevalence Level 3 by 100 inhabitants		
Country	Sample	Current	Lifetime
Norway			
Gotestam & Johansson (2003)	2.014	0.15	
Spain			
Becoña (1993)	1.615	n.s.	1.6
Becoña (1993)	1.028	n.s.	2.0
Becoña (1993)	1.230	n.s.	2.05
Legarda et al. (1992)	598	n.s.	
Sweden			
Volberg et al. (2001)	7.139	1.4 (0.3)	1.2 (0,2)
Switzerland			
Bondolfi et al. (2000)	2.526	2.2	n.s.
United Kingdom			
Sproston et al. (2000)	7.680	1.3	n.s.

Comorbidities (1) with Psy diseases

Affective disorders

Anxiety disorder

Personality disorders

Organized by Henrique Lopes , 2006 from the works of Petry, Derevensky, and others.

Affective disorders	Lifetime rate for general poplation	Article	Sample N	Problematic gamblers	Lifetime rate for L2 and L3 gamblers	Lifetime rate for gamblers non addicts
All affective disorder	8.3%	Bland et al. (1993)	7,214	30 L3	33.3	**14.2**
		Petry, Stinson, & Grant	43,093	195 L3	49.6[62]	**18.5**
Great depressions	4.9%	Bland et al. (1993)	7,214	30 L3	20.0	**12.4**
		Cunningham-Williams et al. (1998)	2.954	161 L2-3	8.8[62]	**5.2**
		Petry, Stinson, & Grant	43,093	195 L3	37.0[62]	**12.3**[63]
Dysthymía	**3.3%**	**Bland et al. (1993)**	**7,214**	**30 L3**	**20.0**[62]	**4.9**
		Cunningham-Williams et al. (1998)	**2.954**	**161 L2-3**	**4.2**	**3.4**
		Petry, Stinson, & Grant			**13.2**[62]	**3.8**[63]

Organized by Henrique Lopes , 2006 from the works of Petry, Derevensky, and others.

Affective disorders	Lifetime rate for general population	Article	Sample N	Problematic gamblers	Lifetime rate for L2 and L3 gamblers	Lifetime rate for gamblers non addicts
Bipolar	1.3%	Bland et al. (1993) Cunningham-Williams et al. (1998) Petry, Stinson, & Grant	7,214 2.954 43,093	30 L3 161 L2-3 195 L3	3.3 3.1 22.8[62]	**0.6** **0.8** **2.5**[63]
Suicide attempt		**Bland et al. (1993)** **Cunningham-Williams et al. (1998)** **Ladoudeur, Dubé, & Bujold (1994)**	**7,214** **2.954** **1.471**	**30 L3** **161 L2-3** **41 L3**	**13.3** **2.0** **26.8**[62]	**1.6** **7.2**

Organized by Henrique Lopes , 2006 from the works of Petry, Derevensky, and others.

Anxiety disorders	Lifetime rate for general poplation	Article	Sample N	Problematic gamblers	Lifetime rate for L2 and L3 gamblers	Lifetime rate for gamblers non addicts
Any affective disorder	14.6%	Bland et al. (1993) Cunningham-Williams et al. (1998) Petry, Stinson, & Grant	7,214 2,954 43,093	30 L3 161 L2-3 195 L3	26.7 7.7 41.3	**9.2** **9.0** **15.5**
Any phobia	12.6%	Bland et al. (1993) Cunningham-Williams et al. (1998)	7,214 2,954	30 L3 161 L2-3	16.7 14.6	**6.8** **9.5**
Agoraphobia	5.2%	Bland et al. (1993) Petry, Stinson, & Grant	7,214 43,093	30 L3 195 L3	13.3 5.1	**2.4** **1.0**
Social phobia	2.8%	Bland et al. (1993) Petry, Stinson, & Grant	7,214 43,093	30 L3 195 L3	0.0 10.6	**1.2** **4.6**
Panic	1.6%	Bland et al. (1993) Cunningham-Williams et al. (1998) Petry, Stinson, & Grant	7,214 2,954 43,093	30 L3 161 L2-3 195 L3	3.3 3.1 18.1	**1.8** **1.6** **4.2**
Obssesive-compulsive	**2.5%**	**Bland et al. (1993)** **Cunningham-Williams et al. (1998)**	**7,214** **2,954**	**30 L3** **161 L2-3**	**16.7** **0.9**	**2.3** **2.1**

Organized by Henrique Lopes , 2006 from the works of Petry, Derevensky, and others.

Personality disorders	Lifetime rate for general poplation	Article	Sample N	Problematic gamblers	Lifetime rate for L2 and L3 gamblers	Lifetime rate for gamblers non addicts
Social conduct disorders		Slutsky et al. (2001)	7,869 mens	615 L2-3	41.0	**7.0**
Anti-social personality	2.6%	Bland et al. (1993) Cunningham-Williams et al. (1998) Petry, Stinson, & Grant (manuscrito submetido para publicação) Slutsky et al. (2001)	7,214 2,954 43,093 7,869 mens	30 L3 161 L2-3 195 L3 615 L2-3	40.0 35.0 23.3 24.1	**3.1** **4.6** **2.8** **2.0**
Avoidance	0.5%-1.0%	Petry, Stinson, & Grant (manuscrito submetido para publicação)	43,093	195 L3	14.0	**2.0**
Obssessive-compulsives	1.0%	Petry, Stinson, & Grant (manuscrito submetido para publicação)	43,093	195 L3	28.5	**6.0**
Paranoia	0.5%-2.5%	Petry, Stinson, & Grant (manuscrito submetido para publicação)	43,093	195 L3	24.1	**3.4**
Schizoid		Petry, Stinson, & Grant (manuscrito submetido para publicação)	43,093	195 L3	15.0	**2.7**
Histrionic	**2.3 %**	**Petry, Stinson, & Grant (manuscrito submetido para publicação)**	**43,093**	**195 L3**	**13.1**	**1.5**

Gambling as "Social disease"









Comorbidities (2) interaction with inherent social situation diseases

Ethnic effect

Marital status

Gender

Resources: Income, education, employment

Organized by Henrique Lopes , 2006 from the works of Petry, Derevensky, and others.

Country	Article	Whites	Minorities
Austrália	Com. Prod. (1999)	2.1%	
New Zealand	Abbott & Volberg (2000)	1.9%	**11.0% Pacific Islands** **7.1% Aboriginal** **2.9% Asians**
	Volberg & Abbott (1994)	6.9%	**31% Pacific Islands** **16% Aboriginals**
Sweden	Volberg et al.	3.7%	**11% Asians**
USA	Gerstein et al. (1999) LT, PY	18%, 0.3%	**4.2%, 1.2% Afro-Americans** **1.7%, 0.8 Hispânics**
	Welte et al. (2001)	**1.8%**	**7.7% Afro-Americans** **7.9% Hispânics** **10.5% Indians** **6.5% Others**

Organized by Henrique Lopes , 2006 from the works of Petry, Derevesky, and others.

Country	Article	Married	Divorced	Single
Austrália	Com Pro (1999)	47.3	8.1	43.2
Canadá	Ladouceur (1991)	2.6	5.2	
New Zealand	Abbott & Volberg (2000) Volberg & Abbott (1994)	3.0 5.5	2.4 8.0	3.2 13.0
Norway	Gotestam & Johansson (2003)	0.4	1.0	
Spain	Legarda et al. (1992)	5.2	10.0	10.4
Sweden	Volberg et al. (2001)	2.0	4.0	6.9
Suitzerland	Bondolfi et al. (2000)	2.0	4.2	
UK	Sproston et al. (2000)	0.5	2.4	1.8
USA	**Gerstein et al. (1999)**	1.7	2.2	2.9

Organized by Henrique Lopes , 2006 from the works of Petry, Derevensky, and others.

Country	Article	Masculine	Feminine
Austrália	Com.Pro. (1999)	60 %	**40%**
Canadá	Bland et al. (1993)	0.7	**0.2**
	Ladouceur (1991)	6.3	**1.7**
Hong Kong	Chen et al. (1993)	2.9	**0.2**
	Wong & So (2003)	9.5	**2.1**
Korea	Lee et al. (1990)	1.9	**0.2**
New Zealand	Abbott & Volberg (2000)	4.0	**2.0**
	Volberg & Abbott (1994)	11.2	**4.3**
Norway	Gotestam & Johansson (2003)	1.0	**0.2**
Spain	Legarda et al. (1992)	10.4	**3.8**
Sweden	Volberg et al. (2001)	6.6	**1.9**
Switzerland	Bondolfi et al. (2000)	4.4	**1.6**
Taiwan	Hwu et al. (1989)	7.9-10.2	**0.0-1.4**
UK	Sproston et al. (2000)	1.3	**0.5**
USA	**Gerstein et al. (1999): Lifetime, past year**	**2.5, 0.5**	**1.7, 0.6**
	Welte et al. (2001) Lifetime SOGS, DIS	**14.3, 5.7**	**8.9, 3.9**
	Past-year SOGS, DIS	**6.4, 4.1**	**4.7, 3.0**

Organized by Henrique Lopes , 2006 from the works of Petry, Derevensky, and others.

Country	Article	Resource Variable	Low	Medium	High
Austrália	Com. Prod. (1999)	Education Income	31% : 24% $30,050 : $31,100		
Canadá	Ladouceur (1991)	Income	7.4%	2.9%	
Hong Kong	Wong & So (2003)	Education	7.6%	4.9%	
New Zealand	Abbott & Volberg (2000) Volberg & Abbott (1994)	Education Unemployed Income Unemployed	4.1% 5.9%Unemployed 3.4% 22.5%Unemployed	2.8% 3.0% Unemployed 2.6% 6.9% Unemployed	**1.5%** **2.3%**
Norway	Gotestam & Johansson (2003)	Education Unemployed	0.5% 0.5% Unemployed	0.6% 0.7% Unemployed	**0.7%**
Spain	Legarda et al. (1992)	Education Unemployed Income	5.2% 8.4% Unemployed 5.0%	7.1% 11.6% Unemployed 8.5%	**8.8%** **4.8%** **Unemployed** **8.4%**
Sweden	Volberg et al. (2001)	Education	5.3%	4.2%	**2.9%**
Switzerand	Bondolfi et al. (2000)	Unemployed Income	1.6% 1.3%	4.1% 3.6%	
UK	Sproston et al. (2000)	Income	1.5%	1.0%	**0.2%**
USA	**Gerstein et al. (1999)**	**Education** **Unemployed** **Income**	**2.6%, 0.9%** **2.15, 0.4%** **Unemployed** **2.0%. 0.5%**	**2.5%, 0.7%** **0.6%, 0.5%** **2.3%, 0.6%**	**1.0%, 0.0%** **2.3%, 0.6%** **1.5%, 0.2%**
	Welte et al. (2001)	**SES categoria**	**4.6%.**	**3.2%**	**1.6%**

There are an huge connection between gambling addiction and other addictions








Addicts hooked on 'crack cocaine' of gambling given NHS treatment

Comorbidities (3) other product addictions

Other addictions and consumptions

Organized by Henrique Lopes , 2006 from the works of Petry, Derevensky, and others.

Addiction	Article	General local population	N	Levels 2 and 3 (%)	Non gamblers (%)
Any	Bland et al. (1993)	16 %	7,214	63.3	**19.0**
	Feigelman et al. (1998)		6,308	35.2	**6.5**
Alcohol	Bland et al. (1993)	13.5%	7,214	63.3	**16.5**
	Cunningham-Williams et al. (1998)		2,954	44.1	**7.5**
	Gernstein et al. (1999)				
	Petry, Stinson, & Grant (manuscrito submetido para publicação)		2,417	9.9	**1.1**
			43,093	73.2	**25.0**
	Smart & Ferris (1996)				
	Welte et al. (2001)		2,016	8.5	**4.4**
			2,638	25.0	**1.4**
Drugs	Bland et al. (1993)	6.1%	7,214	23.3	**6.3**
	Cunningham-Williams et al. (1998)		2,954	15.5	**3.5**
	Petry, Stinson, & Grant		43,093	38.	**8.8**
Tobbaco	**Cunningham-Williams et al. (1998)**	**25%**	**2,954**	**54.7**	**27.2**
	Petry, Stinson, & Grant		**43,093**	**60**	**n.a.**
	Smart & Ferris (1996)		**2,016**	**41.6**	**21.3**

Some findings about comorbidities in Portugal

Henrique Lopes, 2008

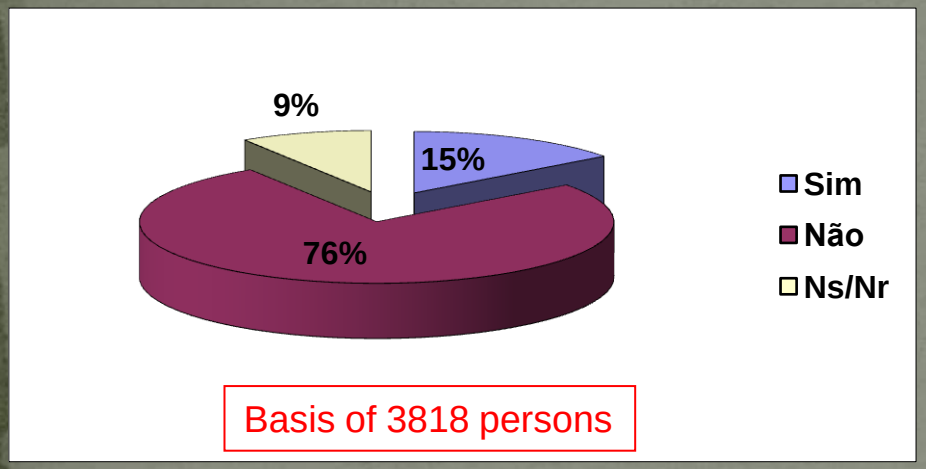
Metodology

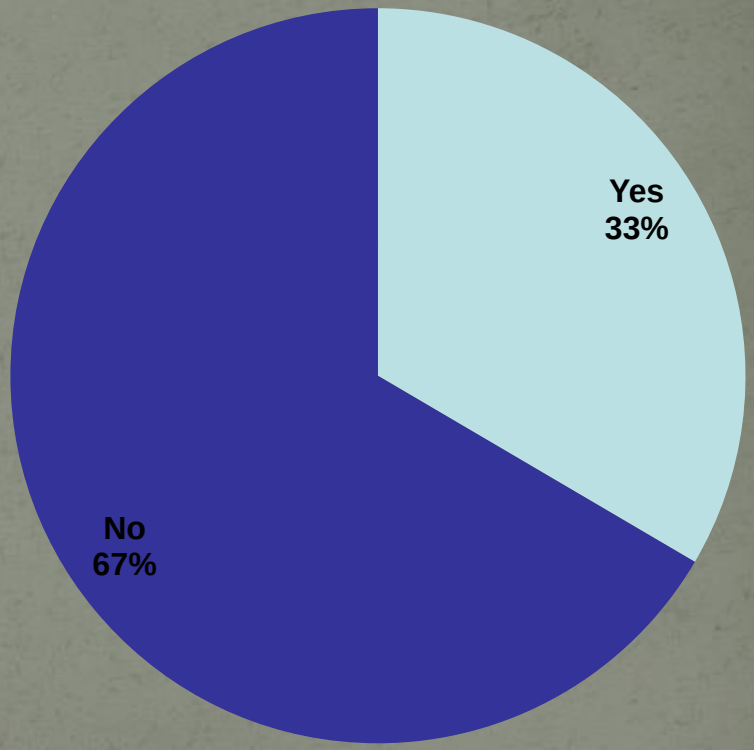
- 7500 persons were randomly contacted by phone (CATI system).
- It was developed a restrictive Ethic Code for assurance that the interview would be absolutly confidential.
- 3850 persons accepted to speak about themselves and the inner social circle.
- It was estimated an error of 1,9% for 95% confidence over national adult population.

The basis: Social knowledge

- It was questioned if the person itself or somebody he/she knows among his/her inner circle had a lifetime event of gambling addiction.
- Starting with 3.850 persons it was possible to achieve a much bigger target.
- With this method it was possible to identify 571 gambling addiction cases.
- The methodology problems stays at “addict classification” given by those without professional expertise.
- It was assumed that by some reason people classify other from inner circle as a “gambling addict”.

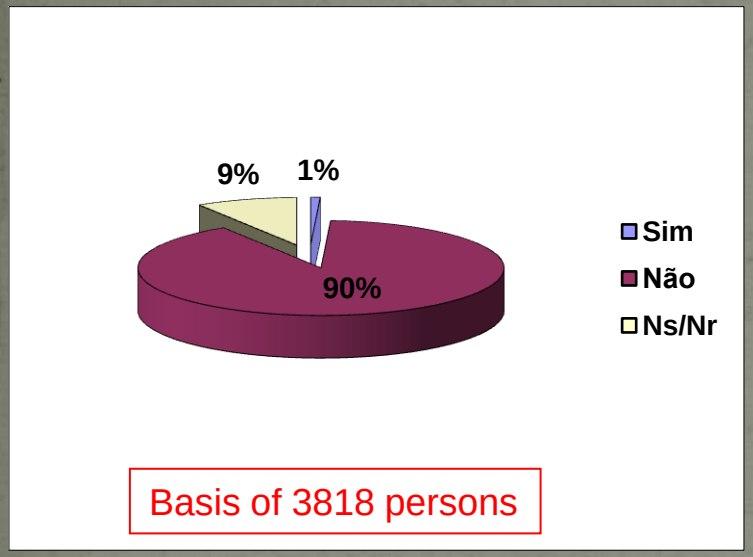
Understanding the existence of a tobacco addiction

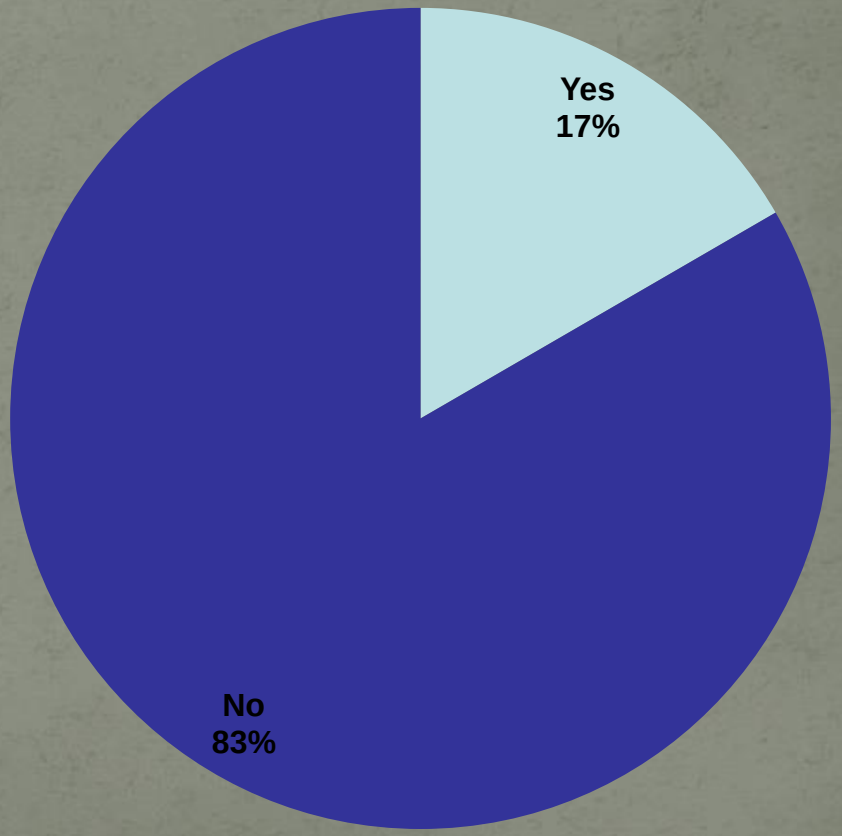




N= 571

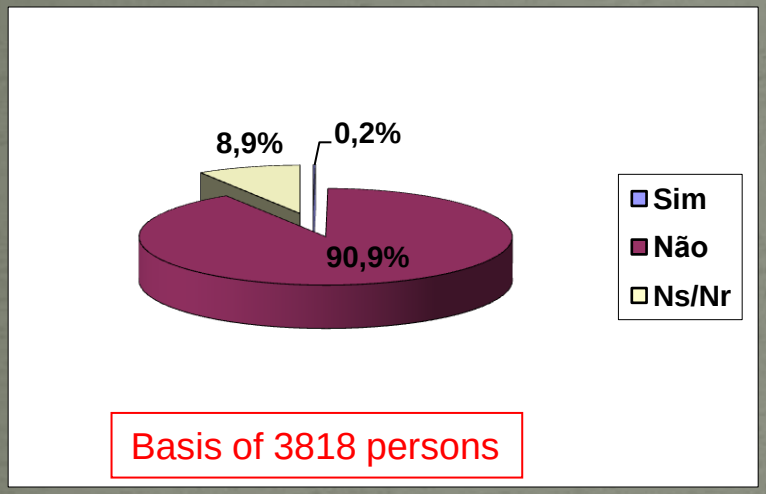
Understanding the existence of an alcoholic addiction

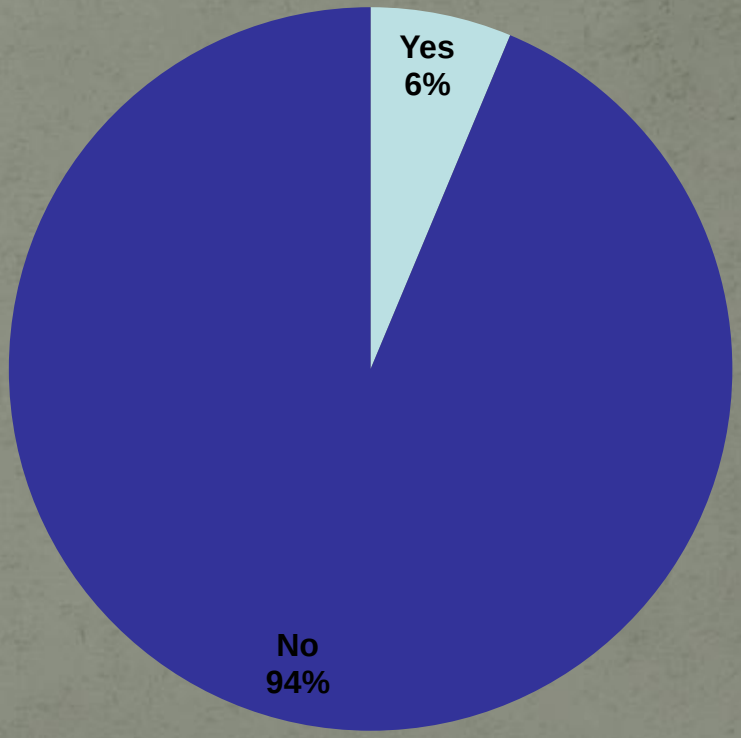




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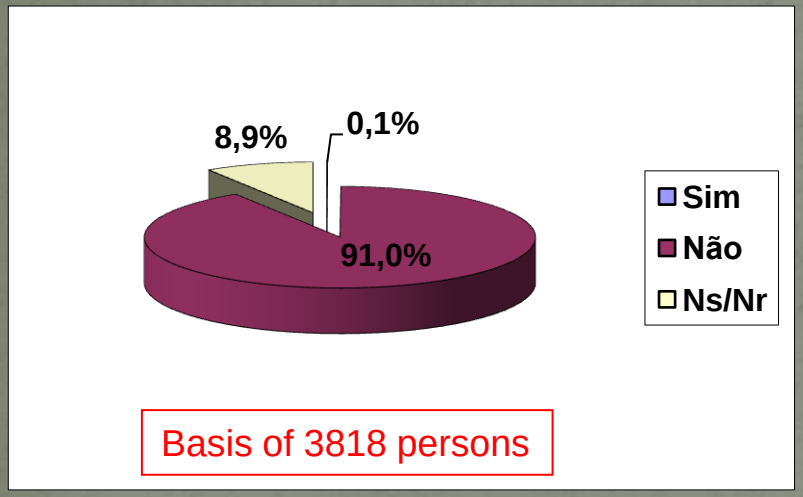
Understanding the existence of the smoked products addiction

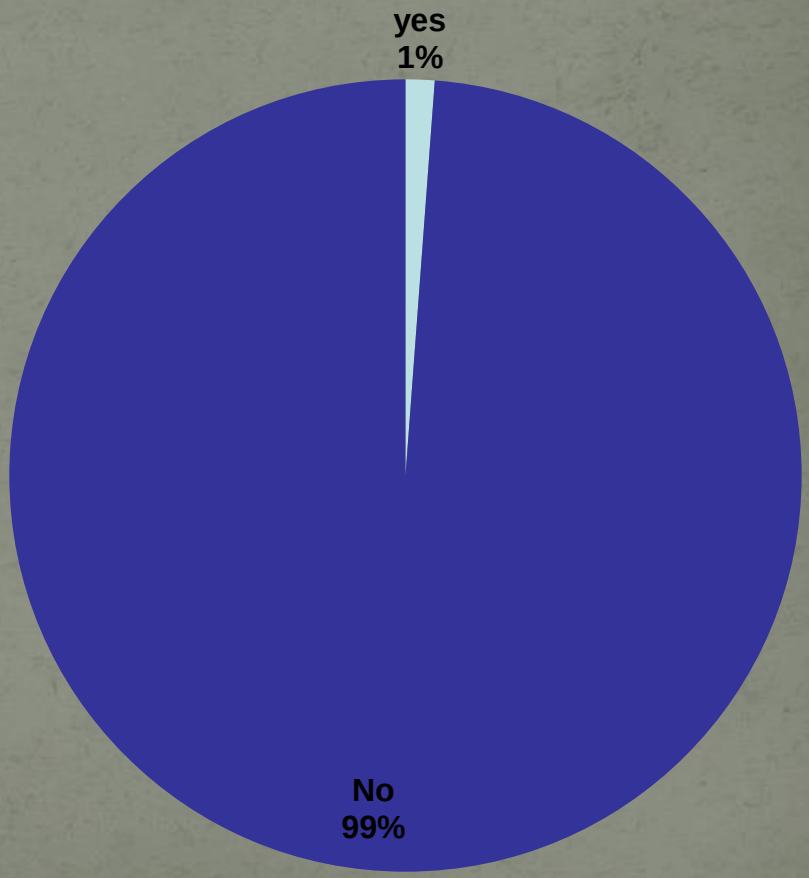




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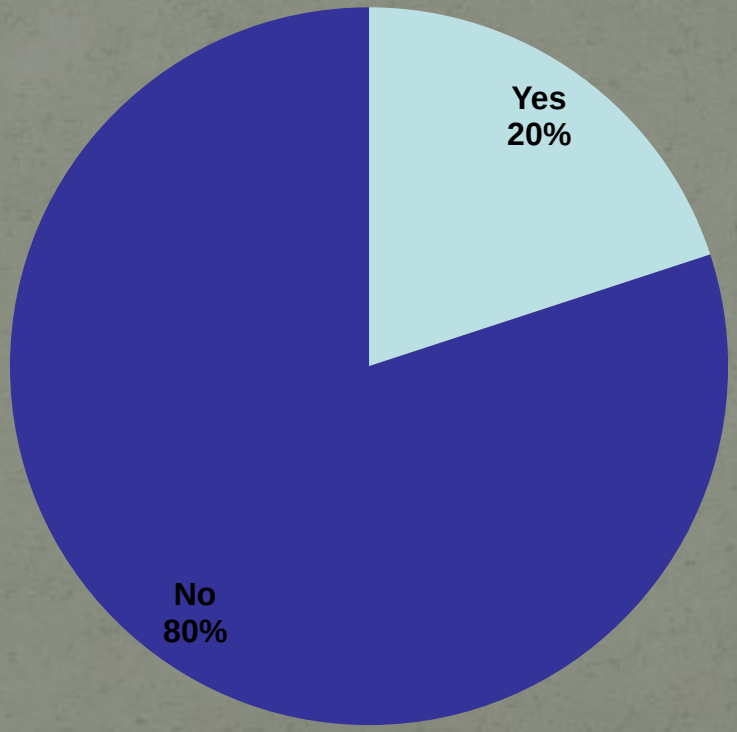
Understanding the existence of injected products addiction





N= 571

Understanding the existence of other addictions

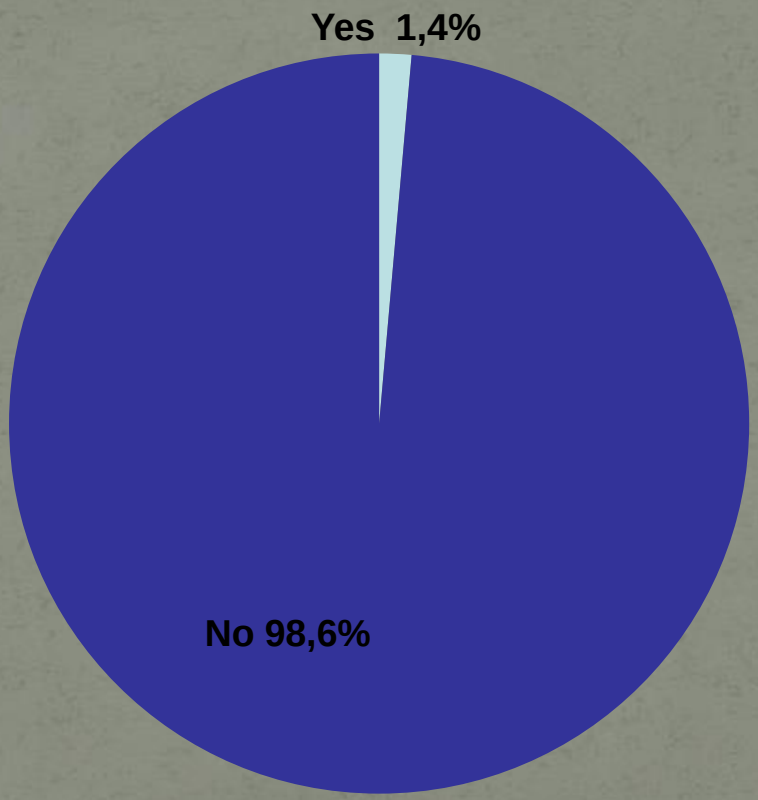


Mainly medical drugs

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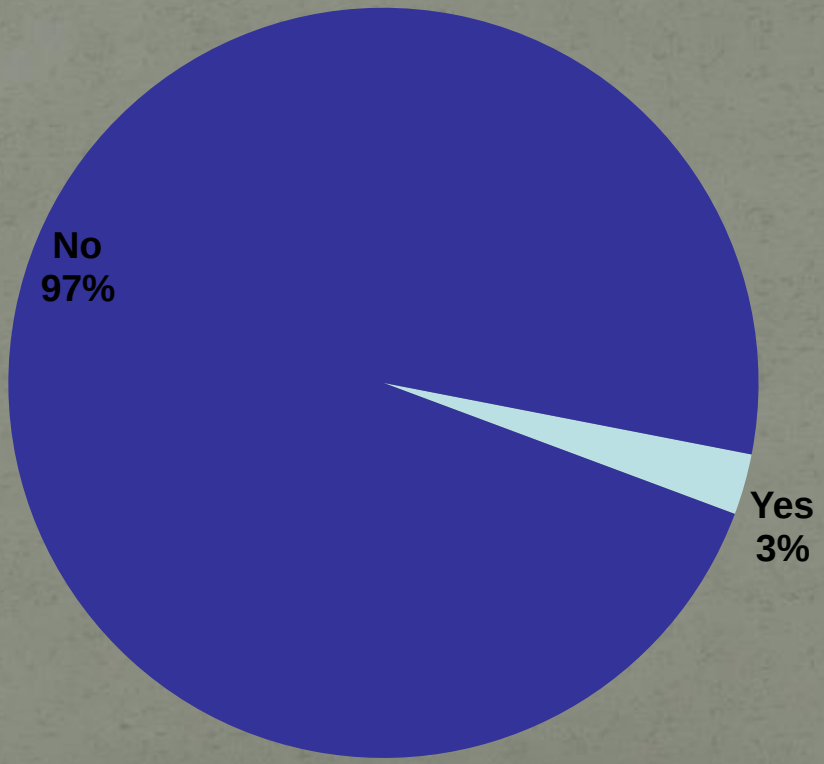
Have the person ever stayed in prison?

National average 0,5% over total population



N= 571

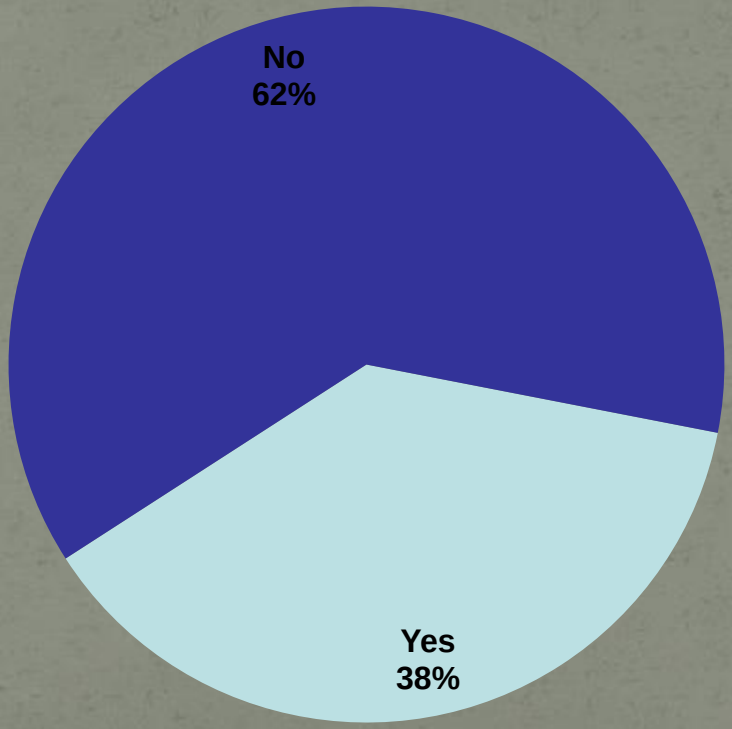
Have the person ever had other significant problems with the Law?



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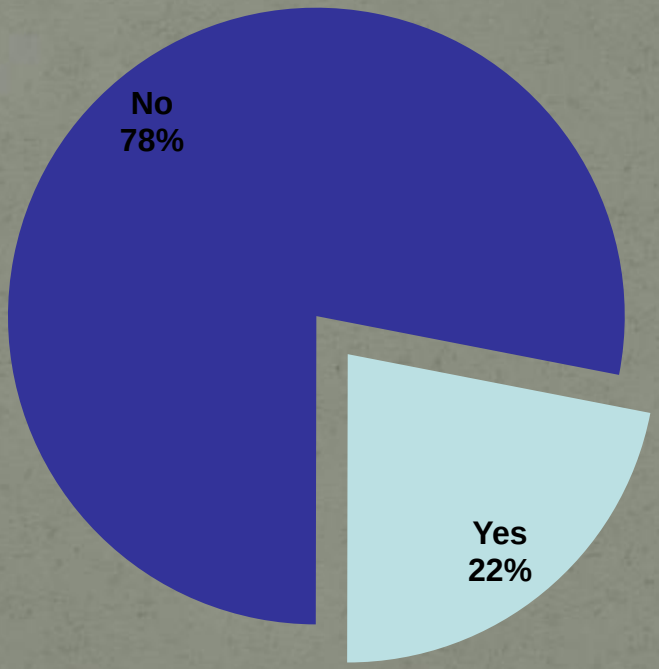
Have the person ever had mental problems?

Internacional lifetime average: around 5% for severe problems
Variable in less severe problems



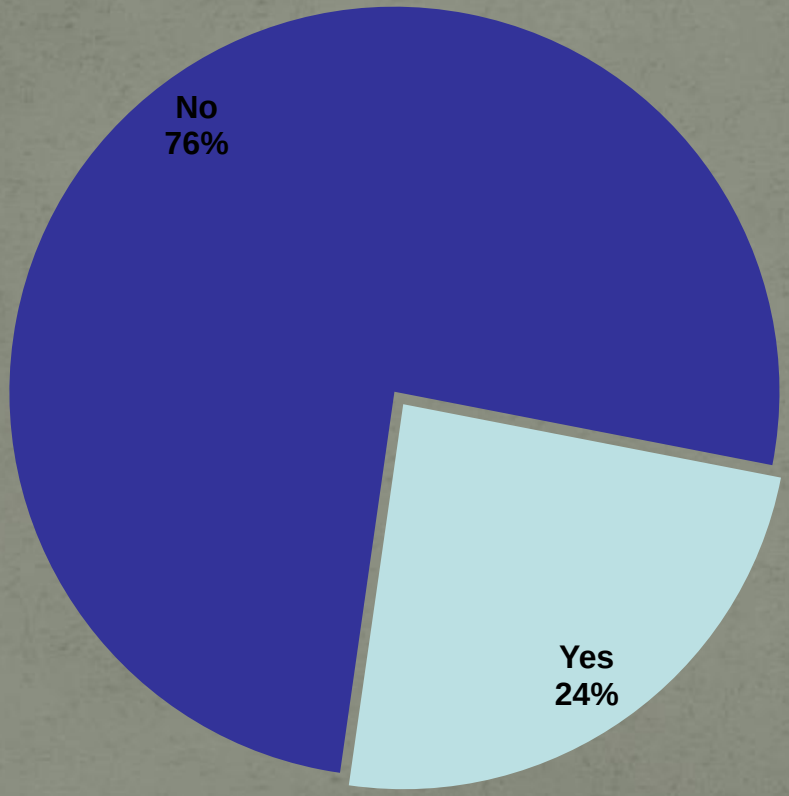
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Did the person get divorced directly caused by gambling?



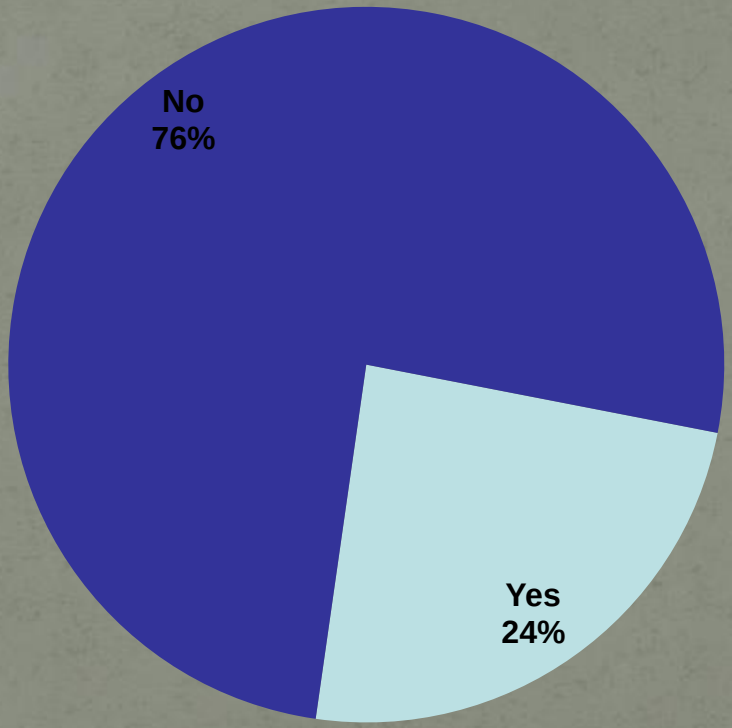
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Have the person had other severe familiar problem related with gambling?



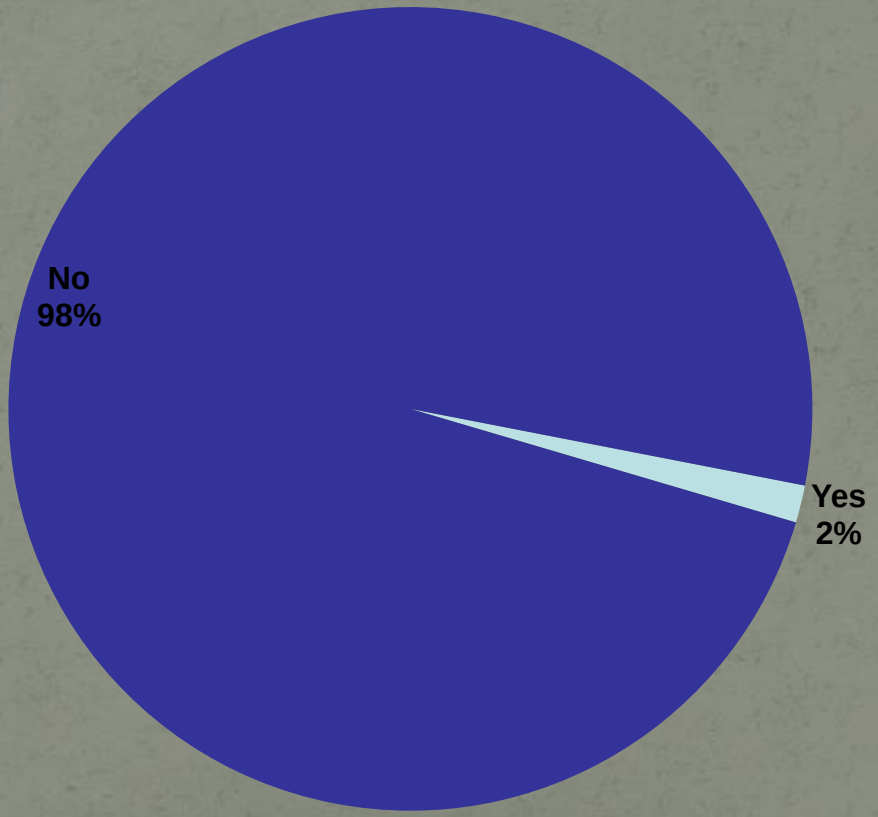
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Have the person had some severe professional problem caused by gambling?



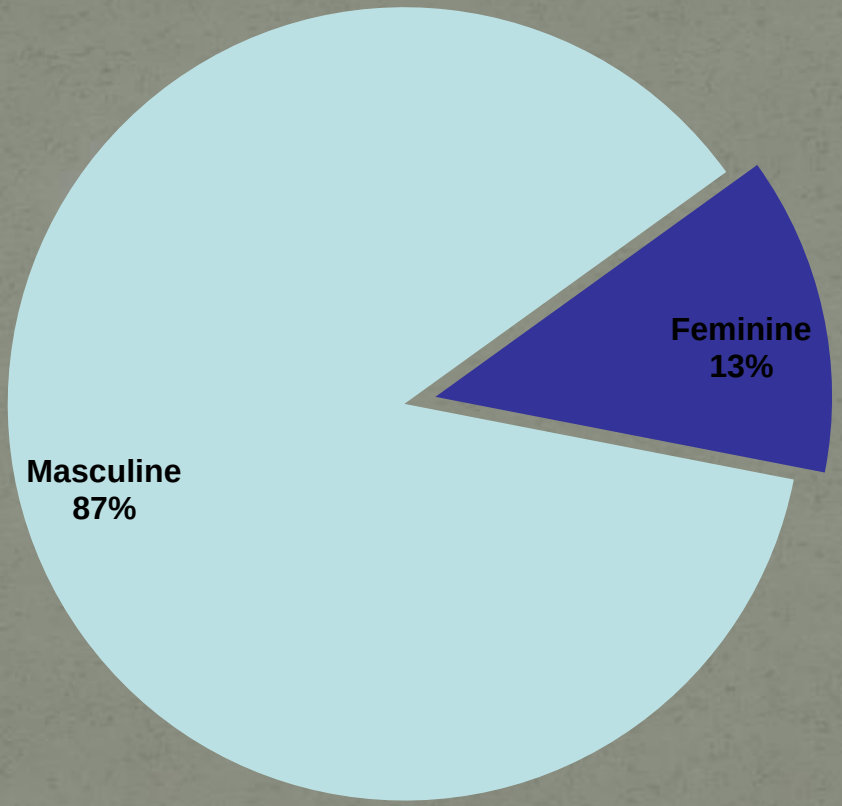
N= 571

Have the person you have been mentioned committed suicide?



N= 571

Which is the gender of the person you referred to?



N= 571

Call for research in gambling comorbidities (1)

- How works other addictions and many others health disorders in the demographic risk groups?
  - Gender and context gender
  - Prisons
  - Emigrants
  - Ethnic minorities
  - Unemployed persons
  - Widows
  - People with low school levels
  - People with low economic income
  - Gambling as a professional disease

Call for research in gambling comorbidities (2)

- How works in the “Psy” risk groups?
  - Depressions
  - Schizophrenia
  - Bipolar disease
  - Suicide field
  - Simultaneous addictions
  - Eating disorders
  - Impulsive disorders

Call for research in gambling comorbidities (3)

- How works in the neurologic risk groups?
  - Dopamine disorders
    - Parkinson's disease
  - Dopamine receptors diseases (mainly D4 receptor)
    - Hypersexuality
    - Shopping addiction
    - Other addictions without products
- How works the arrangement of neurotransmitters?
  - Are known 146 neurotransmitters. It is only and badly known the role of 3 or 4 neurotransmitters and their pathways regarding to gambling.

Call for research in gambling comorbidities (4)

- How works the technological changing paradigm in terms of comorbidities?
  - From physical to digital gambling.
  - Changing to more young gamblers
  - From gaming to gambling
    - The learning of gambling rules in extremely young ages (p.e. gaming slot machines for 5-6 years old).
    - Gambling derivatives from gaming tools
    - Gambling work as young slavery

Call for research in gambling comorbidities (5)

- The most important!!
  - In the history of every technologies problems the best solutions came from the own technologies.
  - How works the Internet solutions for control excessive gambling?
    - Capture by bits for identify and blocking bad operators
    - Algorithms for identifying at risk gamblers
    - Algorithms for blocking multi sites gamblers
    - Online solutions for prevention, education, identification and orientation of at risk and pathological gamblers.

centro de estudos e investigação aplicada

20 ANOS ISEC Instituto Superior de Educação e Ciências

Thanks for your time

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