

World  
Psoriasis  
Happiness  
Report 2018



Norway

© LEO Innovation Lab in cooperation with The Happiness Research Institute, 2018. All rights reserved.  
Any part of this report can be reproduced only with the explicit acknowledgement of the copyright  
owner. The following reference should be included: LEO Innovation Lab, The Happiness Research  
Institute (2018), World Psoriasis Happiness Report 2018.

Available at <https://psoriasisishappiness.report/>

# Contents.

---

## 4 General Data & Happiness Results

---

- 4 General Data & Distributions
- 5 Happiness & Well-being
- 5 Stress & Loneliness
- 10 Psoriasis & Comorbidities

---

## 11 Healthcare Professionals

---

- 12 Healthcare Professional Type
- 14 & Frequency of Visits
- Healthcare Professional Relationship

---

## 15 Appendix

---

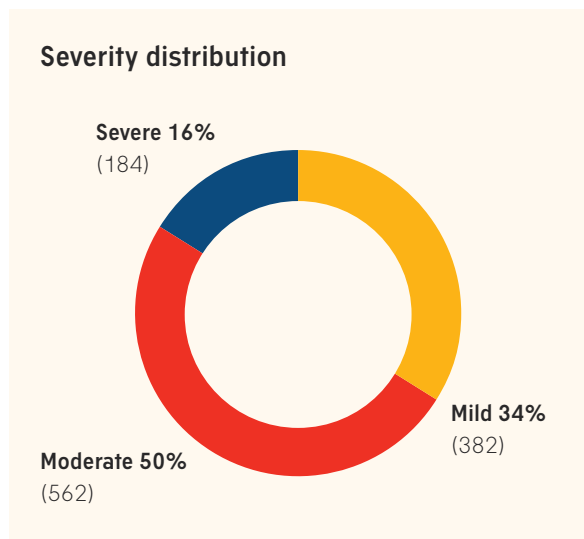
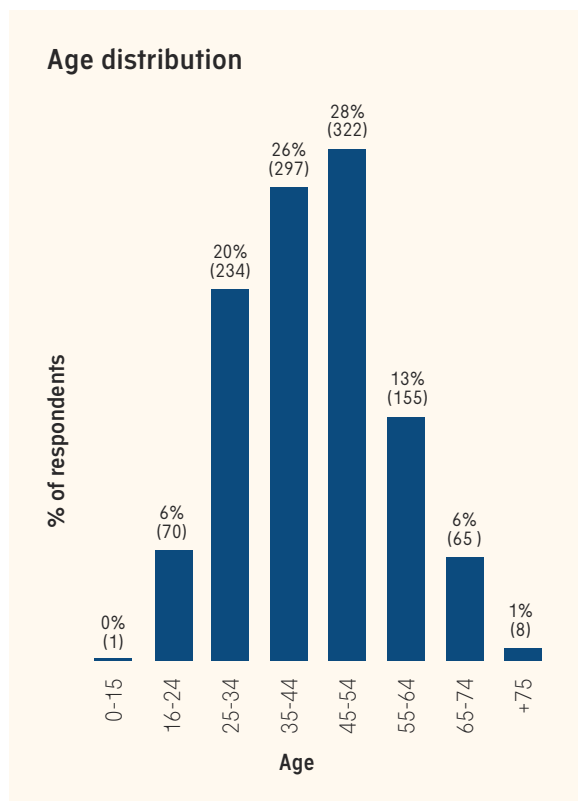
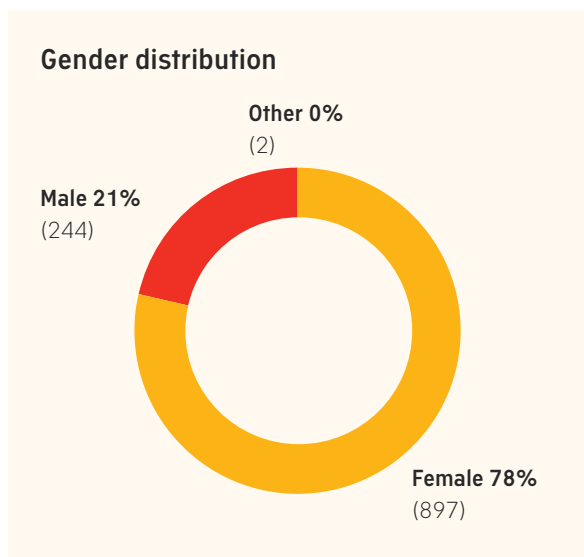
### Authors:

Christian Birch Okkels, MSc Physics, Data Scientist at LEO Innovation Lab  
Michael Birkjær, MSc Political Science, Analyst at the Happiness Research Institute



# General Data & Happiness Results

**General Data & Distributions.** Total sample size: 1,151



Severity distribution	Norway (N = 1,127)	Global (N = 54,438)
Mild	34%	37%
Moderate	50%	47%
Severe	16%	16%

In Norway, more than one third (34%) of all respondents report mild psoriasis, while half (52%) report moderate, and 16% report severe psoriasis<sup>1</sup>. The self-perceived severity distribution among the Norwegian respondents is in line

with the global averages. (See also Fig. A.1 in the Appendix for a country comparison).

<sup>1</sup> The target population of PsoHappy is people living with self-reported psoriasis, meaning that the respondents do not necessarily have the diagnosis confirmed by a dermatologist. For this reason, the findings of this report can't be cited or referred to as if they were based on a clinical diagnosis confirmed by healthcare specialists.

## Happiness & Well-being

Happiness level: 5.7 Happiness ranking: 12th / 21

Happiness	Norway		Global	
	Happiness level	Happiness gap	Happiness level	Happiness gap
<b>Overall</b>	5.7	-24.0%	5.8	-11.1%
<b>Gender</b>				
- female	5.7	-23.8%	5.7	-14.1%
- male	5.7	-24.5%	6.1	-5.8%
<b>Severity</b>				
- mild	6.3	-16.5%	6.0	-6.1%
- moderate	5.7	-24.7%	5.6	-14.1%
- severe	4.8	-36.9%	4.6	-30.6%

The average happiness level of 5.7 places Norway as 12th in the happiness ranking of the 21 countries in the analysis. With a happiness gap of -24%, however, Norway is one of the countries with the largest happiness gaps (see Fig. A.2 and A.3 in the Appendix).

### Some of the things that stand out in the table above are that:

- On average, women and men with self-reported psoriasis in Norway are equally happy, contrasting to the global averages and many other countries, where women are often less happy than men.
- The happiness gaps become larger along with self-perceived severity: people who report more severe degrees of psoriasis are significantly less happy and experience larger happiness gaps: People living with self-perceived severe psoriasis report a happiness gap of up to -36.9%, while those with mild psoriasis report a happiness gap of -16.5%.

## Stress & Loneliness

As seen from Fig. D.1 and D.2 in the Appendix, the percentages of respondents in Norway who experience high stress and loneliness are<sup>2</sup>:

**High stress: 43.4%**

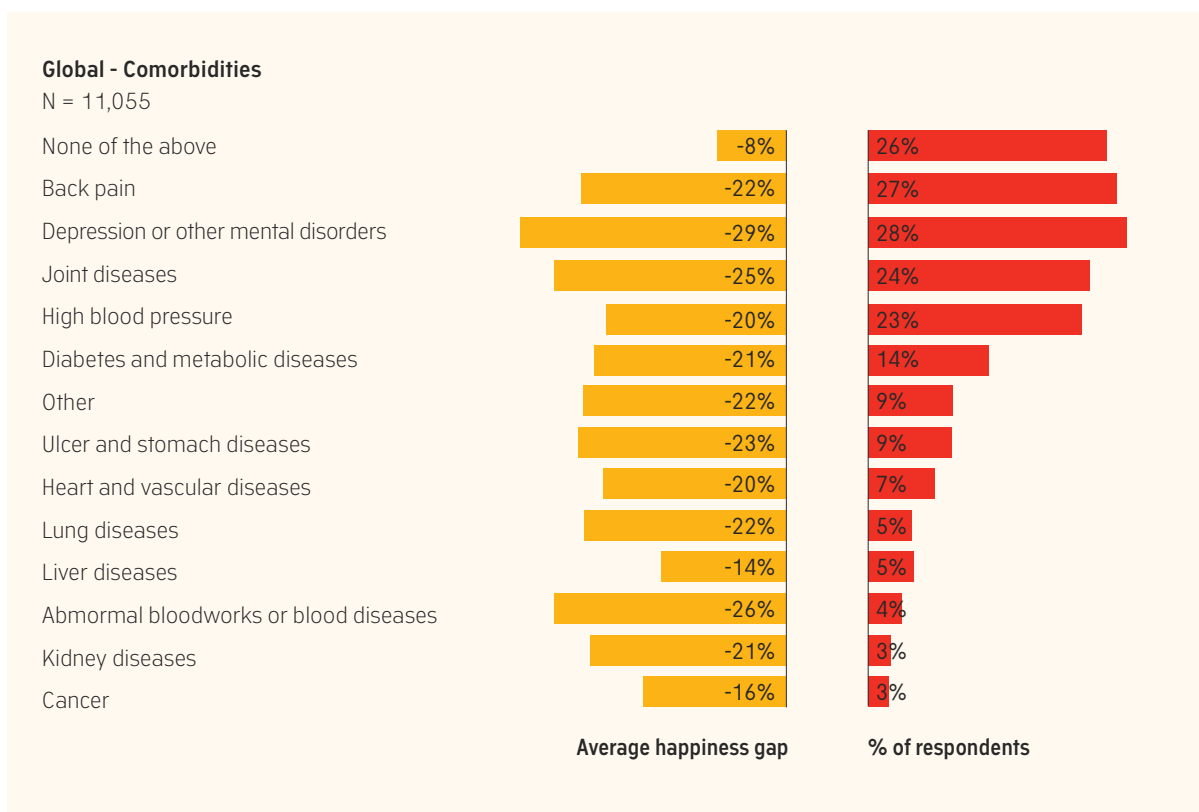
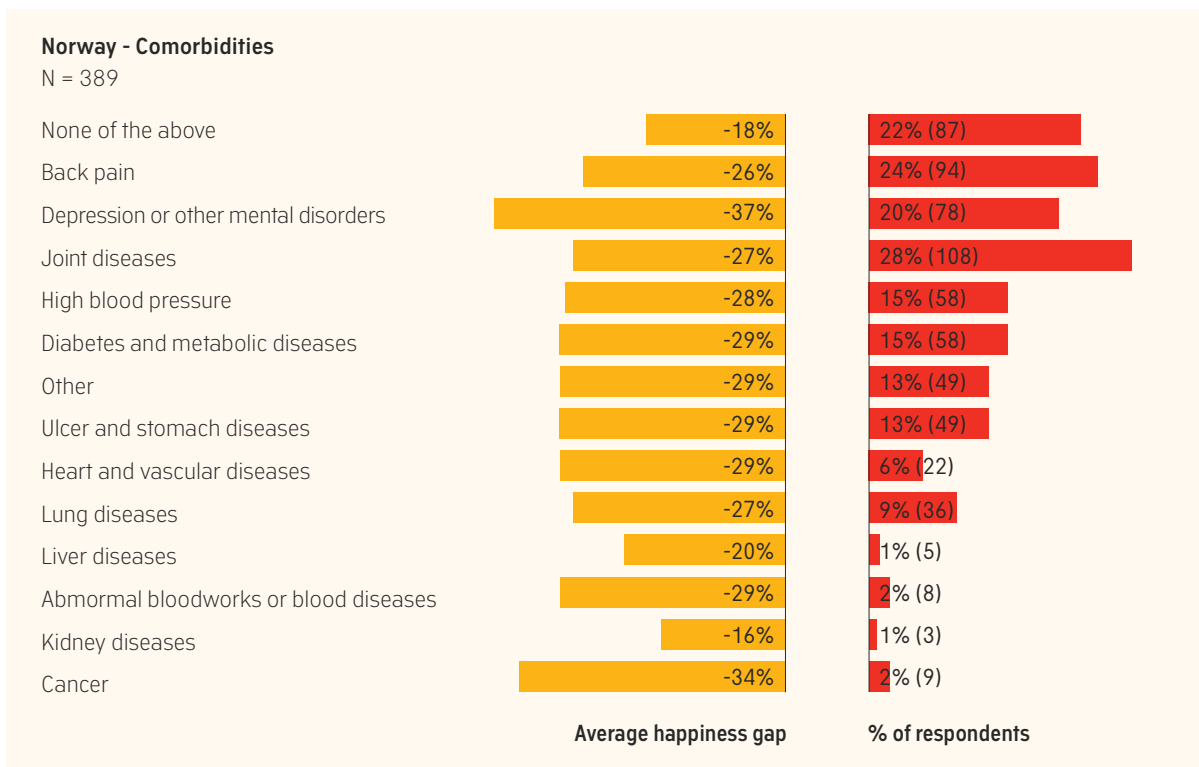
**Loneliness: 29.9%**

Norway is the country with the smallest proportion of people living with high stress, although 43% of respondents (i.e., more than 2 in 5) is still quite a lot. As for loneliness, Norway lands roughly in the middle amongst the countries surveyed, with almost a third (30%) of respondents reportedly living in loneliness.

<sup>2</sup> See Appendix Fig. D.1 and Fig. D.2 for methodology and calculation used to determine “high stress” and “loneliness”.

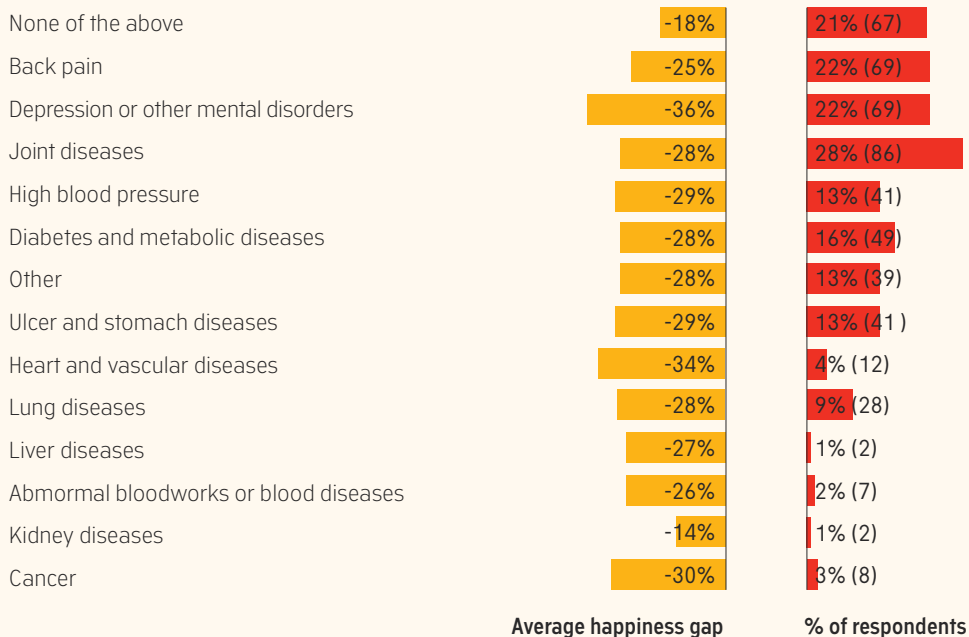
### Psoriasis and Comorbidities

We have analysed a variety of comorbidities reported by people living with self-perceived psoriasis and their effect on people’s happiness and well-being. The graphs below show the overall distribution of comorbidities as well as detailed by gender and self-perceived psoriasis severity. Numbers and results for the global picture of all countries considered are included for reference and comparison.



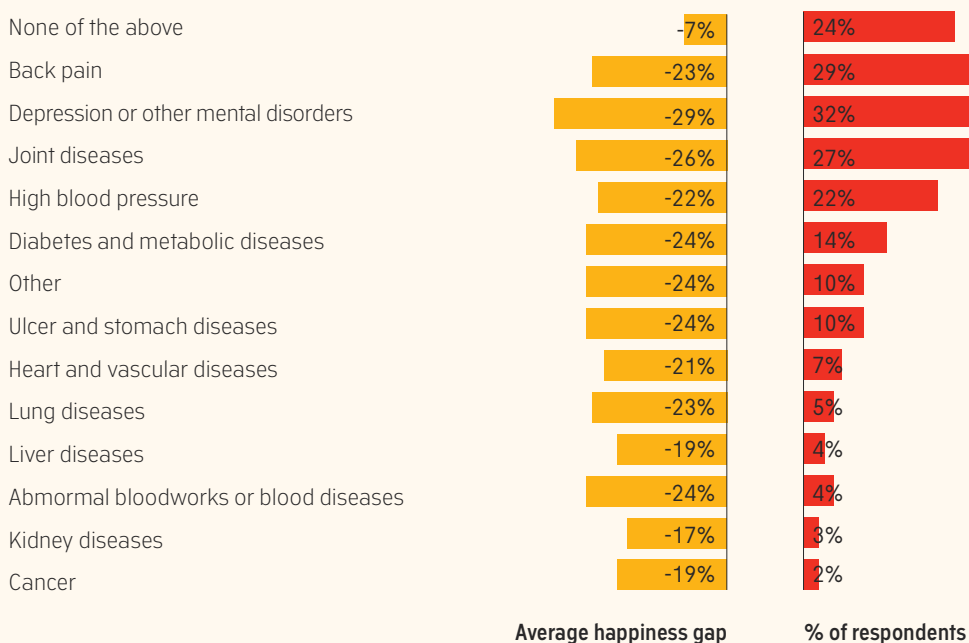
**Norway - Comorbidities by gender - Female**

N = 312



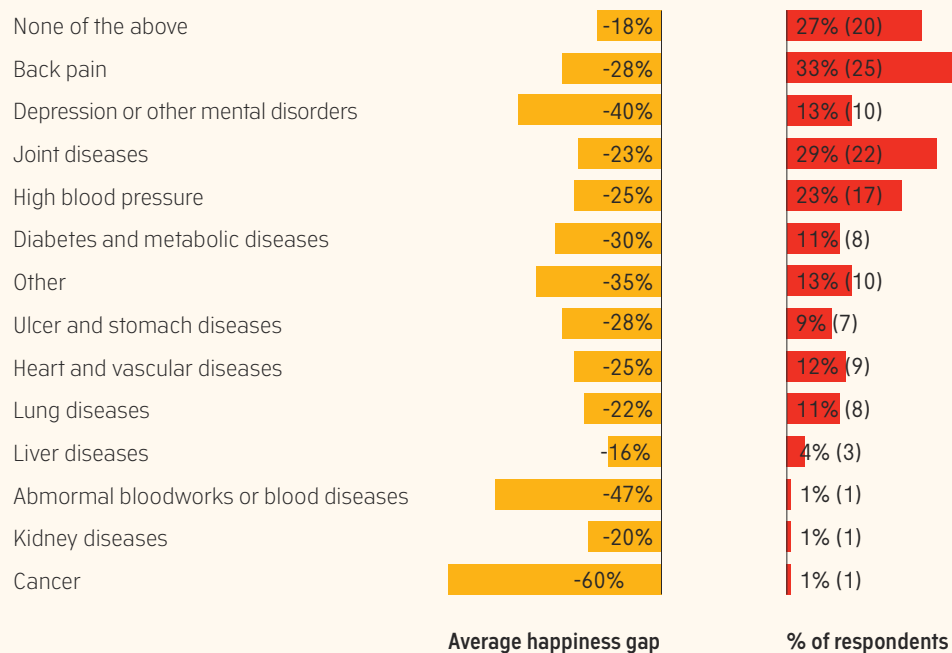
**Global - Comorbidities by gender - Female**

N = 8,649



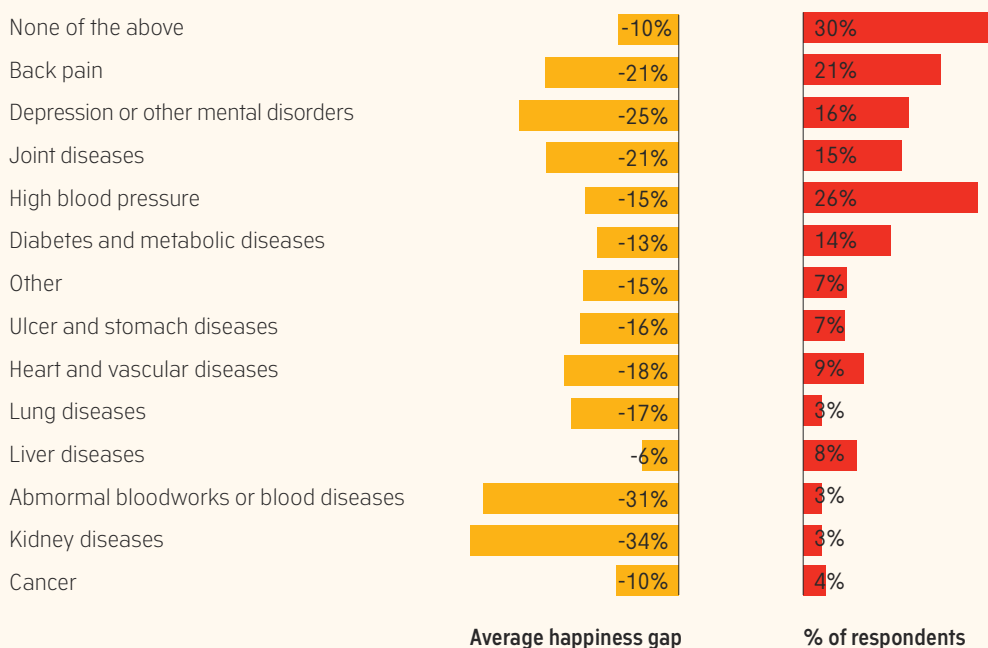
**Norway - Comorbidities by gender - Male**

N = 75



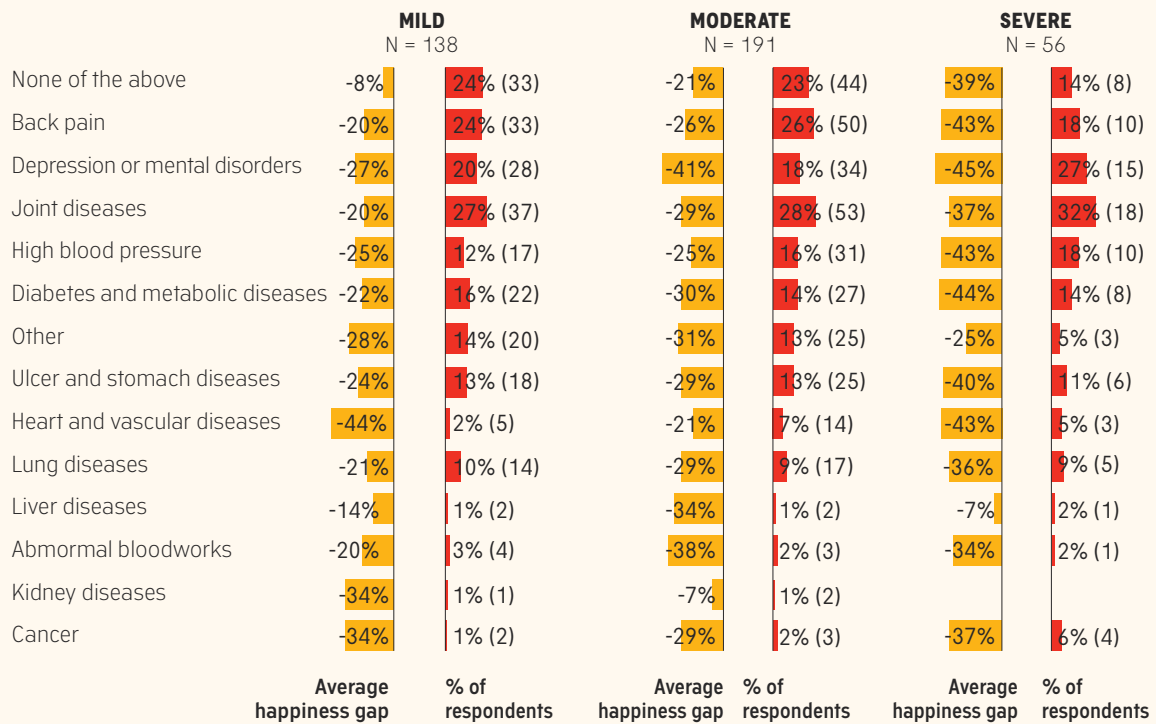
**Global - Comorbidities by gender - Male**

N = 2,349



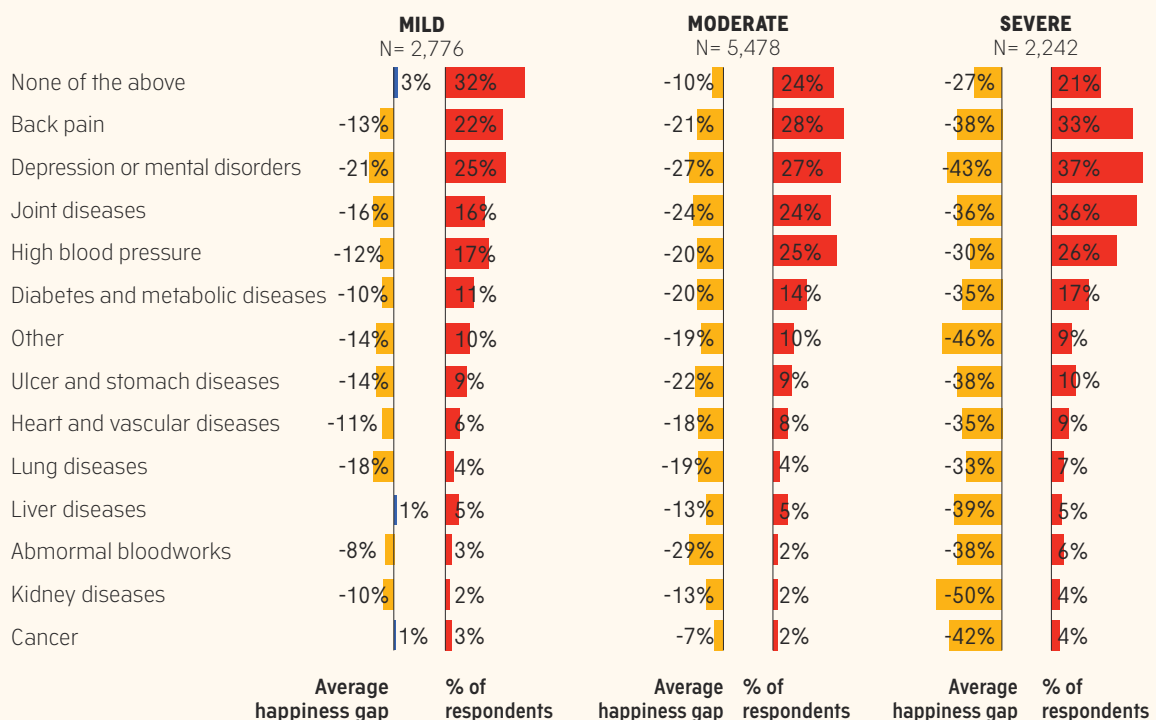


**Norway - Comorbidities by severity**



Note that the sample sizes in Norway are small, especially for respondents with self-perceived severe psoriasis, meaning that there's a higher degree of uncertainty related to these insights, that should be read as indicative hypotheses. Further surveys to gather more data are recommended to confirm these hypotheses.

**Global - Comorbidities by severity**



**Looking at the first figure with overall results on comorbidities and happiness gaps, we note, among other things, that:**

- Almost 4 in 5 (78%) of respondents in Norway reportedly suffer from one or more of the listed comorbidities (as 22% report “none of the listed”), which is close to the global norm of 74%.
- The most highly reported comorbidities in Norway are back pain (24%), depression or other mental disorders (20%), and joint diseases (28%). Compared to the global picture, it’s interesting that fewer respondents in Norway report depression or other mental disorders (and high blood pressure as well), while a larger proportion report joint diseases.
- The happiness gaps related to most of the comorbidities are slightly larger in Norway than seen in the global picture. In particular, depression or other mental disorders stands out as the comorbidity related to the largest happiness in Norway - of -37%<sup>3</sup>.

**Turning to the split by gender, we see that:**

- A slightly larger proportion of female respondents in Norway report comorbidities than men (79% vs. 73% globally). This is close to the global norm for both genders, if perhaps slightly larger.
- Depression seems to be more prevalent among women, with 22% of female respondents in Norway reporting it as a comorbidity compared to only 13% of men. On the other hand, a third of male respondents (33%) report back pain compared to only 22% of women. A larger proportion of male respondents in Norway also report high blood pressure (23% of men vs. 13% of women).

- Depression or other mental disorders is clearly the comorbidity related to the largest happiness gap for both genders (-36% for women and -40% for men).

**Moving on to the split by severity in the bottom graphs, we see that<sup>4</sup>:**

- A larger percentage of respondents with self-perceived severe psoriasis experience comorbidities compared to people with mild and moderate psoriasis. 76% of the respondents with self-perceived mild psoriasis report that they have one or more of the listed comorbidities (as 24% report none of the listed). For respondents with self-perceived severe psoriasis, the proportion is as large as 86%.
- The prevalence of back pain decreases slightly with self-perceived severity. The prevalence of depression or other mental disorders, however, and to a slightly smaller extent also joint diseases, increases with severity (from 20% to 27% for mild and severe for depression, and from 27% to 32% for mild and severe for joint diseases).
- Finally, we see that, as in the global case, the worse the severity the larger the happiness gap (although no claim of causality can be made).

<sup>3</sup> It is important to stress the fact that we cannot make any claims of causality in regards to comorbidities and happiness gaps; it’s not necessarily one or more particular comorbidities that cause the given happiness gap.

<sup>4</sup> Note that the sample sizes in Norway are rather small, especially for respondents with self-perceived severe psoriasis, meaning that there’s a larger degree of uncertainty related to the data and results.

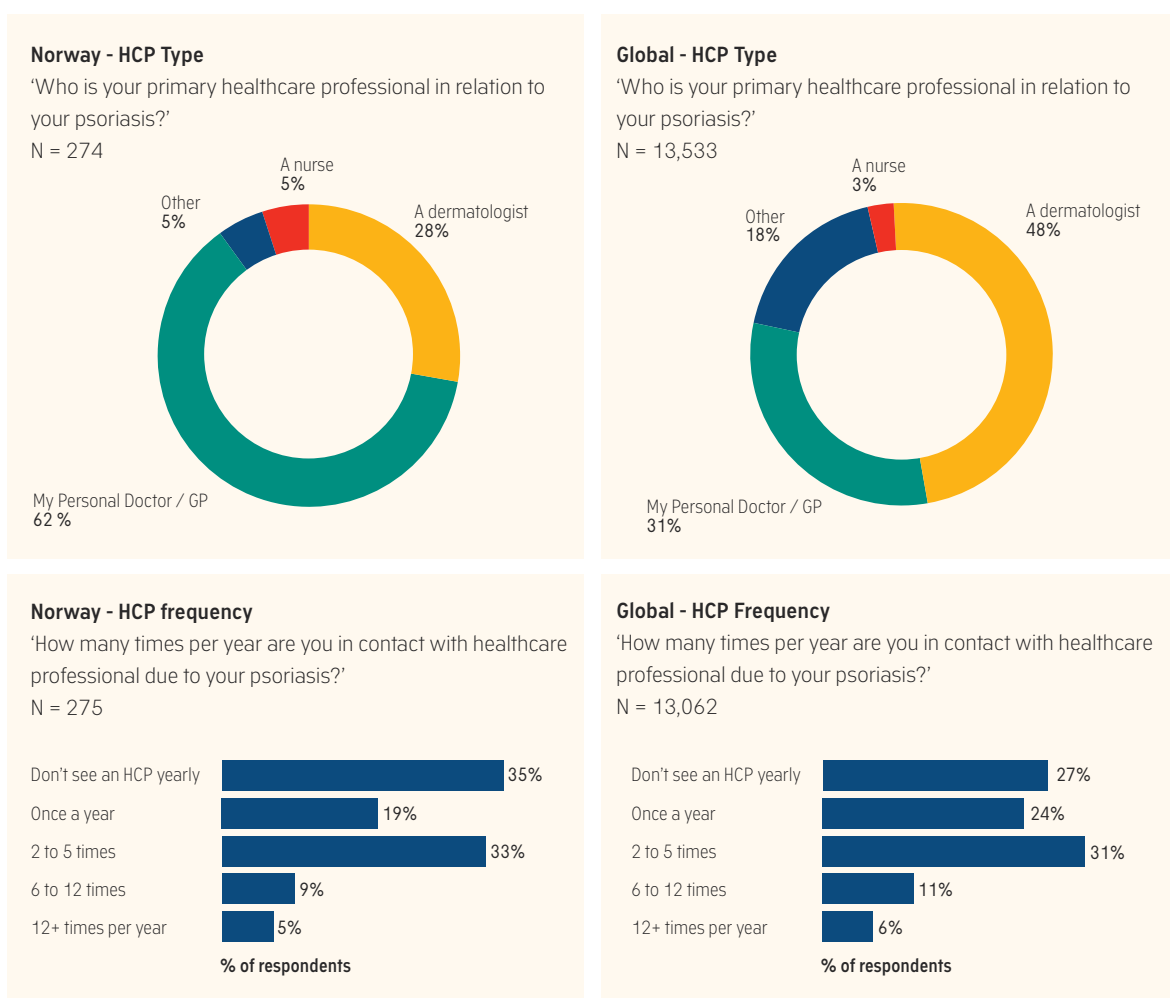
# Healthcare Professionals



A variety of aspects related to the perceived relationship with healthcare professionals (HCPs) are analysed in this section. This includes people's satisfaction with their healthcare providers overall, as well as general perceptions of the quality of the relationship and interactions with them.

### Healthcare Professional Type & Frequency of Visits

Firstly, we consider the distributions for the type of healthcare professional, how often people see their healthcare professional, and where the healthcare professional works. These are shown in the figures below for both Norway and the global case.



#### Some of the things we see from the figures above are that:

- Most of the respondents in Norway (62%, i.e. more than 3 in 5) cited a personal doctor or GP as their main healthcare professional in relation to their psoriasis. This is different from the global averages of 31%; most respondents (48%) cited a dermatologist as their main healthcare professional. (See also Fig. C.1 in the

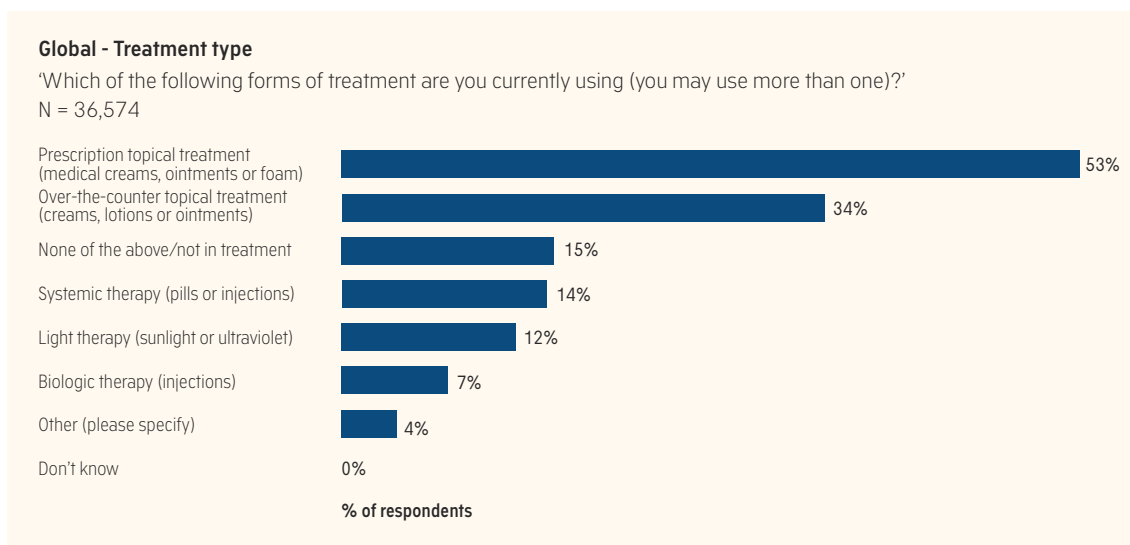
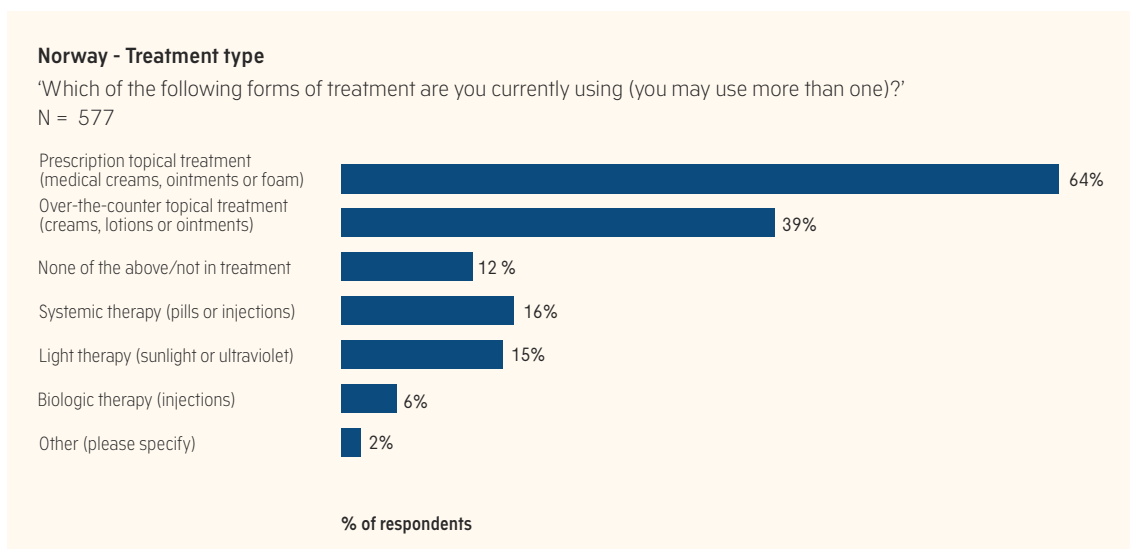
- Appendix for a comparison to other countries.) In regards to frequency of visits, more than a third (35%) of respondents in Norway don't see their healthcare professional yearly, while 33% see their HCP 2-5 times. Compared to the global averages, the respondents in Norway generally seem to visit their healthcare professionals slightly less often. (See also Fig. C.2 in the Appendix for a comparison to other countries).

## Diagnosis & Type of Treatment

As seen in the table below, 3 in 4 (75%) in Norway said their psoriasis was diagnosed by a dermatologist, while only 18% said it was diagnosed by a personal doctor or GP. (See also Fig. C.4 in the Appendix for a country comparison).

Was your psoriasis diagnosis by..	Norway (N = 251)	Global (N = 14,184)
Dermatologist	75%	69%
Personal doctor / GP	18%	21%
Haven't been diagnosed by a doctor	6%	6%
Nurse	0%	1%
Other	1%	3%

As for the type of treatment and how people get or buy it, this is shown in the figures below.



The most commonly reported treatment type in Norway is prescription topicals, used by 64% of respondents. This is followed by over-the-counter topicals, used by 39%. Compared to the global norm, an even larger proportion

in Norway are on topicals, both over-the-counter, but especially on prescription. (See also Fig. C.5 in the Appendix for a comparison with other countries.)

## Healthcare Professional Relationship

The table below shows the number of people disagreeing with different statements around the healthcare professional relationship.

‘To what extent do you agree with each of the following statements?’ % who ‘Disagree’ or ‘Strongly disagree’	Norway			Global		
	Overall	Women	Men	Overall	Women	Men
"My healthcare professionals are clear with the information about how to treat psoriasis"	49% (131)	53% (113)	33% (18)	40% (5,329)	41% (3,933)	36% (1,341)
"My healthcare professionals fully understand the impact psoriasis has on my mental well-being"	68% (183)	70% (150)	59% (33)	53% (7,055)	56% (5,311)	44% (1,683)
"I can get in touch with the healthcare professional when I'm in need"	26% (70)	27% (57)	23% (13)	36% (4,798)	37% (3,532)	34% (1,227)
"I have confidence in the abilities of my healthcare professionals to treat psoriasis"	34% (90)	35% (75)	27% (15)	42% (5,946)	44% (4,344)	39% (1,550)
"I always follow the advice of my healthcare professionals"	29% (79)	31% (65)	25% (14)	27% (3,692)	27% (2,611)	28% (1,035)
"I've been informed about all the different treatment options related to my condition"	74% (197)	76% (159)	68% (38)	55% (7,240)	57% (5,424)	50% (1,763)
"The system provides me with sufficient financial support in relation to my skin condition"	75% (201)	76% (161)	71% (40)	67% (8,865)	69% (6,535)	63% (2,267)
"There is sufficient public awareness regarding my disease"	85% (225)	87% (181)	79% (44)	79% (10,127)	82% (7,524)	72% (2,532)

(The numbers in parentheses indicate the number of respondents corresponding to the particular percentages, and are therefore not the total sample sizes.)

The respondents in Norway are generally more dissatisfied with aspects around the relationship with their healthcare professional than is seen in the global picture. For example:

- More than 2 in 3 (68%) don't think their healthcare professionals fully understand the impact that psoriasis has on their mental well-being (vs. 53% globally).
  - Roughly 3 in 4 (74%) don't think they have been informed of all the different treatment options related to psoriasis (much higher than the global norm of 55%).
  - 3 in 4 (75%) also don't think the system provides them with sufficient financial support in relation to their skin condition (higher than the global norm of 67%).
- On the other hand, more respondents in Norway think that they can get in touch with their healthcare

professional when in need (only 26% disagree with the statement vs. 36% globally).

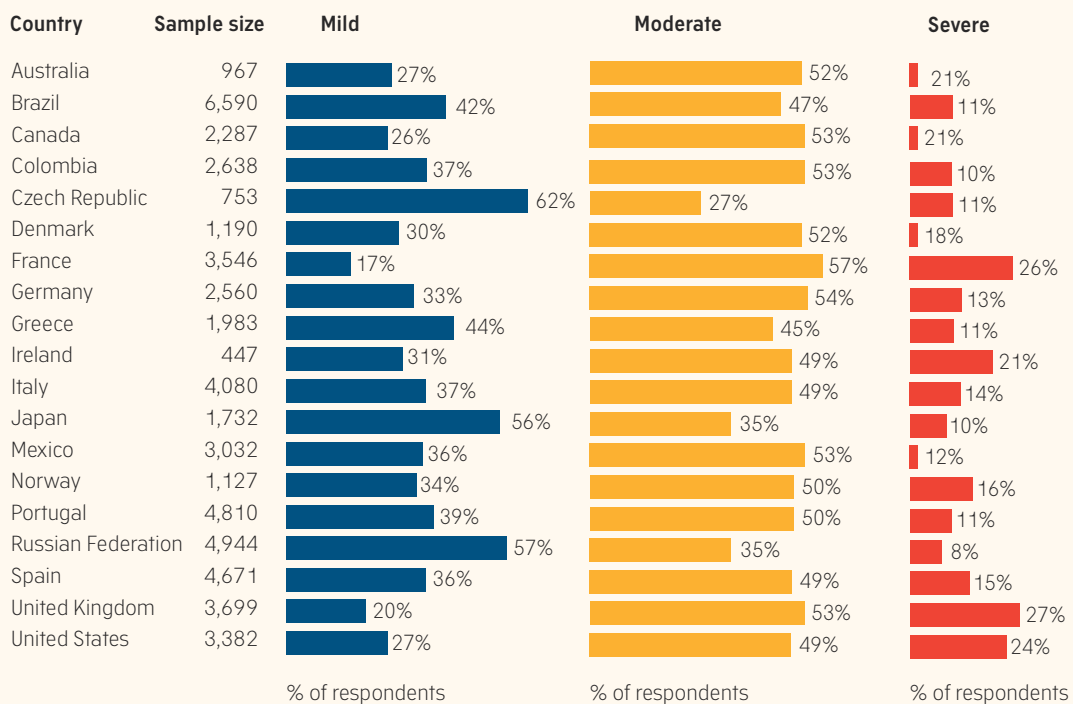
The largest degree of dissatisfaction is seen when it comes to public awareness regarding psoriasis, where as many as 85% of the respondents in Norway don't think it is adequate (vs. 79% globally).

In regards to gender differences, we see that the female respondents in Norway are more dissatisfied than their male counterparts across all the different aspects and statements. This is especially true for the statement around healthcare professionals being clear with the information about how to treat psoriasis, where 53% of women vs. 33% of men disagree.

# Appendix

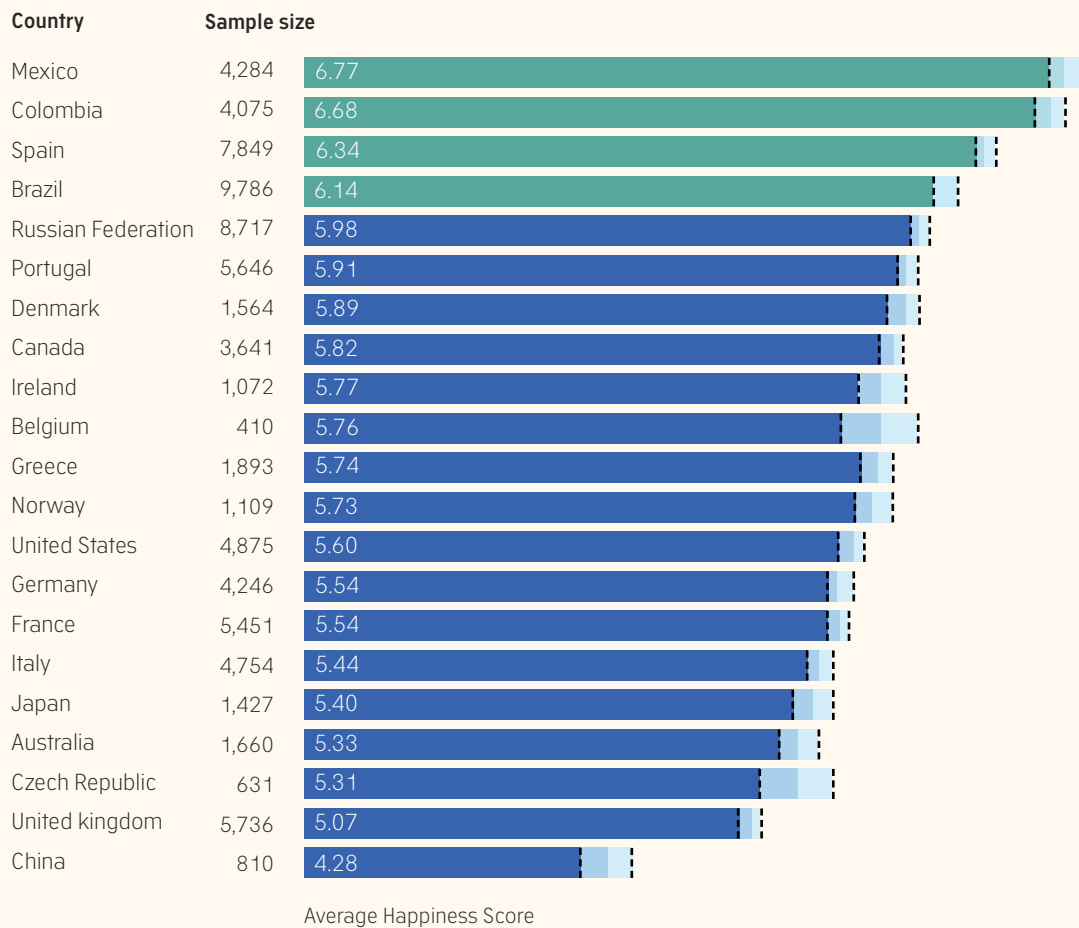
# General Results & Happiness

**Figure A.1:** Distribution of subjective, self-perceived severity by country  
Severity by country



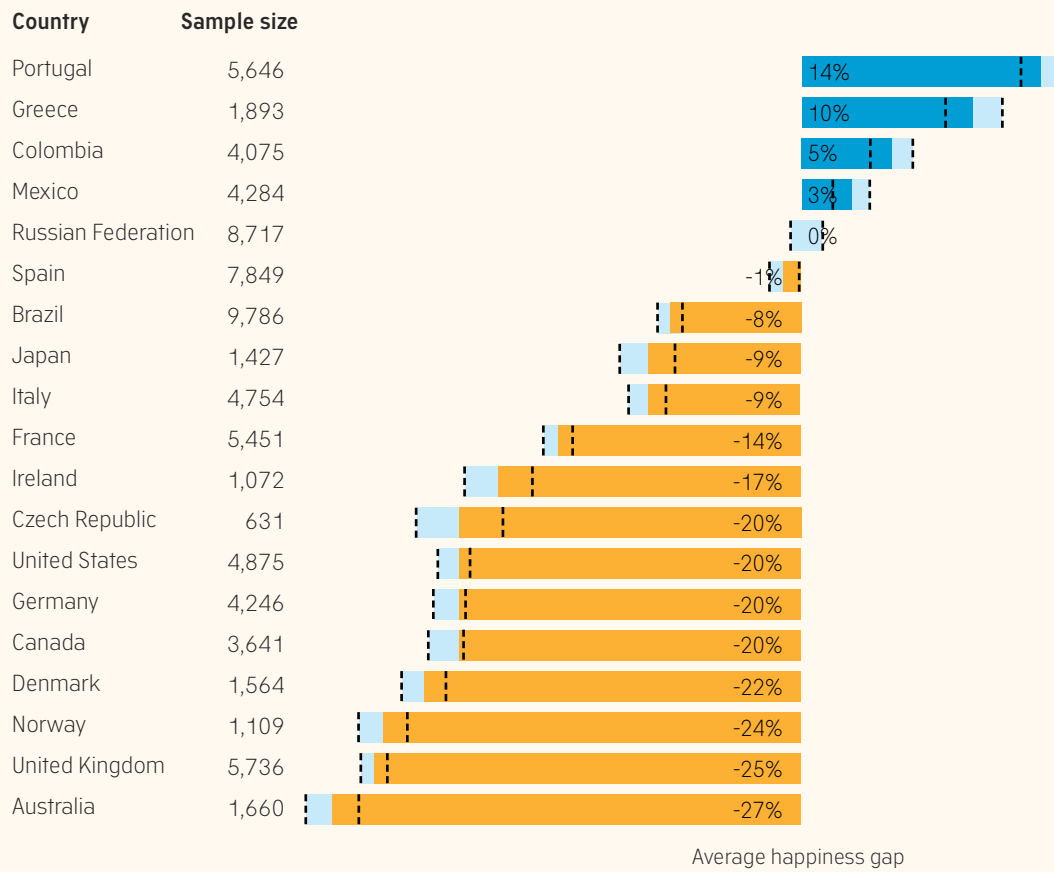


**Figure A.2:** Country ranking: Psoriasis happiness levels per country  
(With 95% confidence interval bands)



Average happiness score for each country. Colours show the score difference, with green indicating an average score higher than 6 and dark blue a lower average score. The context is filtered on Cantril Ladder which ranges from 0-10.

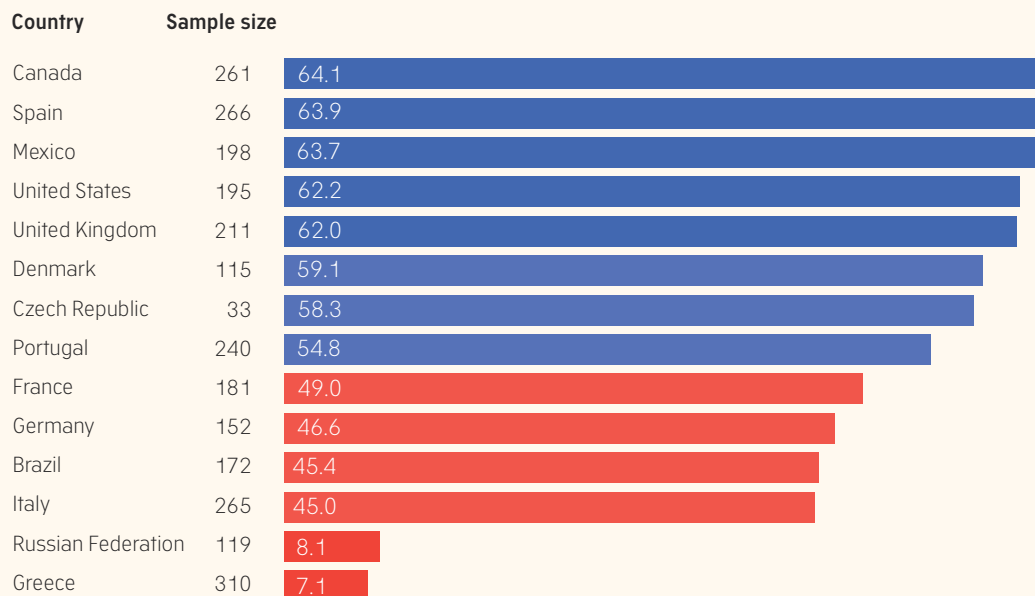
**Figure A.3:** Average happiness gap by country  
(With 95% confidence interval bands)



# Productivity & Happiness

**Figure B.1:** Productivity at work (measured on a scale from 0-100) when people should have stayed home because of their psoriasis

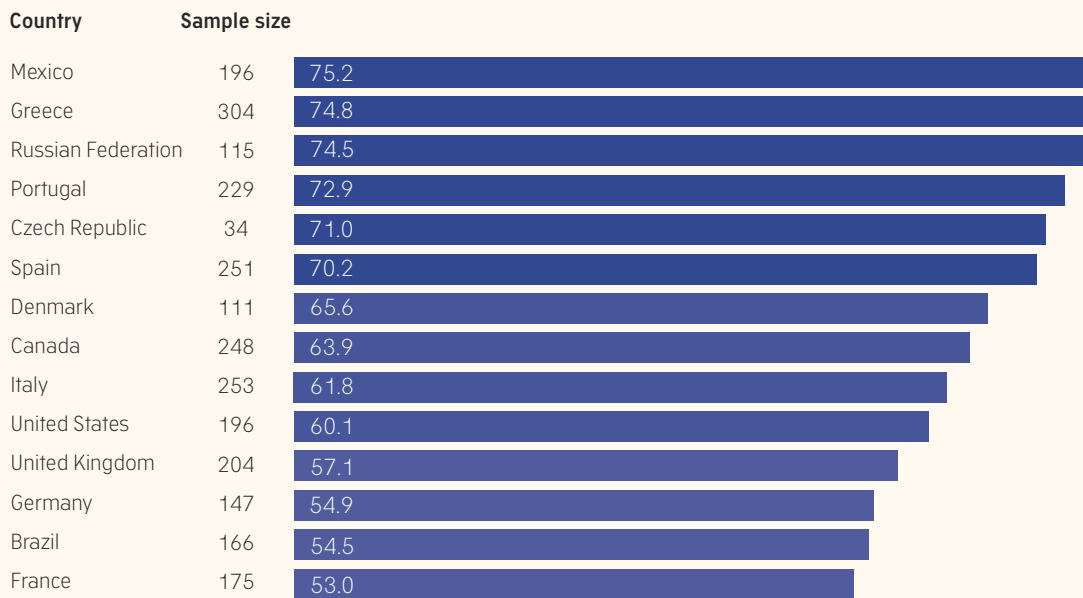
“In the last 4 weeks, for the time when you worked even though you felt you should be at home because of your psoriasis, how productive would you say you were? Use a scale from 0 to 100, 0 being not at all productive, 100 being totally productive.”



Average productivity at work when people should have stayed home because of their psoriasis

**Figure B.2:** Productivity at work (measured on a scale from 0-100) when people should have stayed home because of other health issues

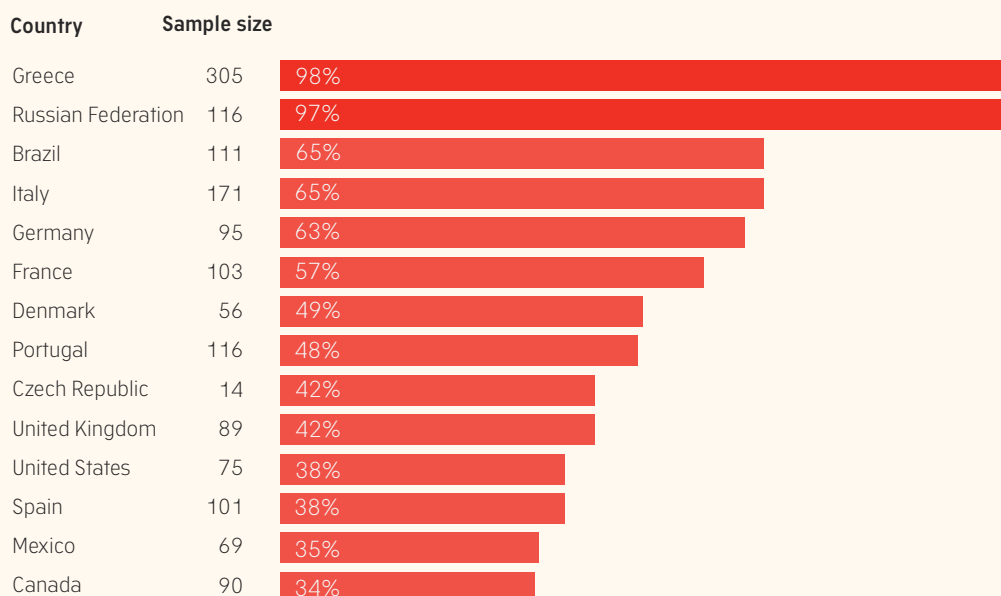
“Using the same scale, how affected was your productivity at work while you felt you should have stayed home because of other health issues? 0 means not at all productive, 100 means totally productive.”



Average Productivity at work when people should have stayed home because of other health issues

**Figure B.3:** Percentage of people working at 50% productivity or less (measured on a scale from 0-100) when they should have stayed home because of their psoriasis

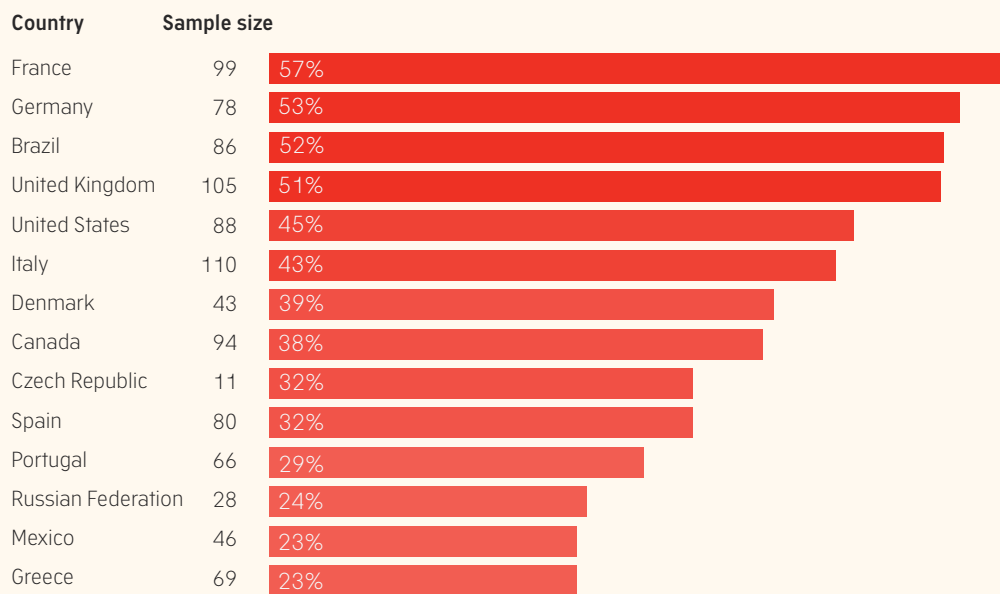
“In the last 4 weeks, for the time when you worked even though you felt you should be at home because of your psoriasis, how productive would you say you were? Use a scale from 0 to 100, 0 being not at all productive, 100 being tptally productive.”



Percentage of people working at 50% productivity or less when they should have stayed home because of their psoriasis

**Figure B.4:** Percentage of people working at 50% productivity or less (measured on a scale from 0-100) when they should have stayed home because of other health issues

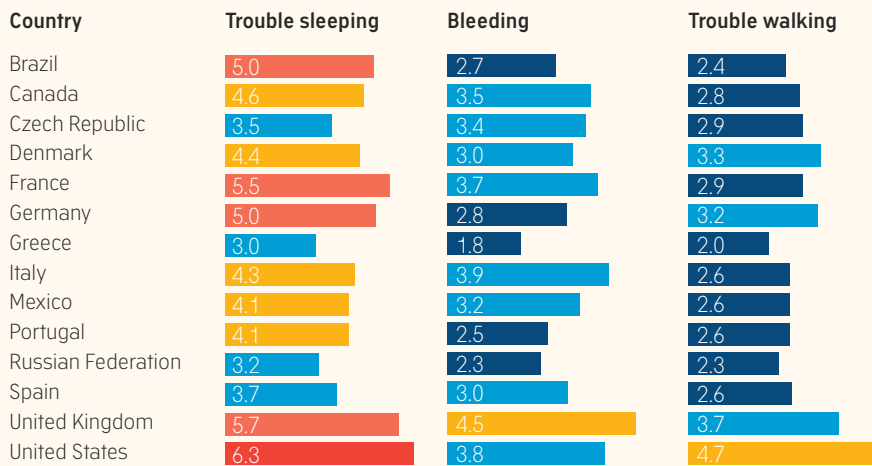
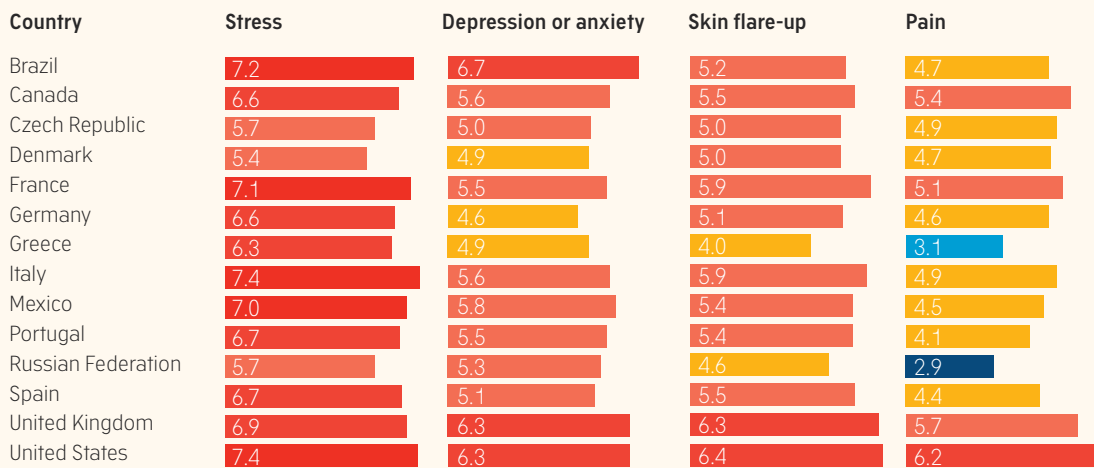
“Using the same scale, how affected was your productivity at work while you felt you should have stayed home because of other health issues? 0 means not at all productive, 100 means totally productive.”



Percentage of people working at 50% productivity or less when they should have stayed home because of other health issues

**Figure B.5:** Average impact of symptoms on work life in the past 4 weeks, as measured on a scale from 0-10

“On a scale from 0 to 10, 0 being no impact, 10 being maximum impact, please assess how each of the below aspects has impacted your work life in the past 4 weeks”



**Table B.6:** Estimated cost to society from lost productivity (adjusted for purchase) power parity):

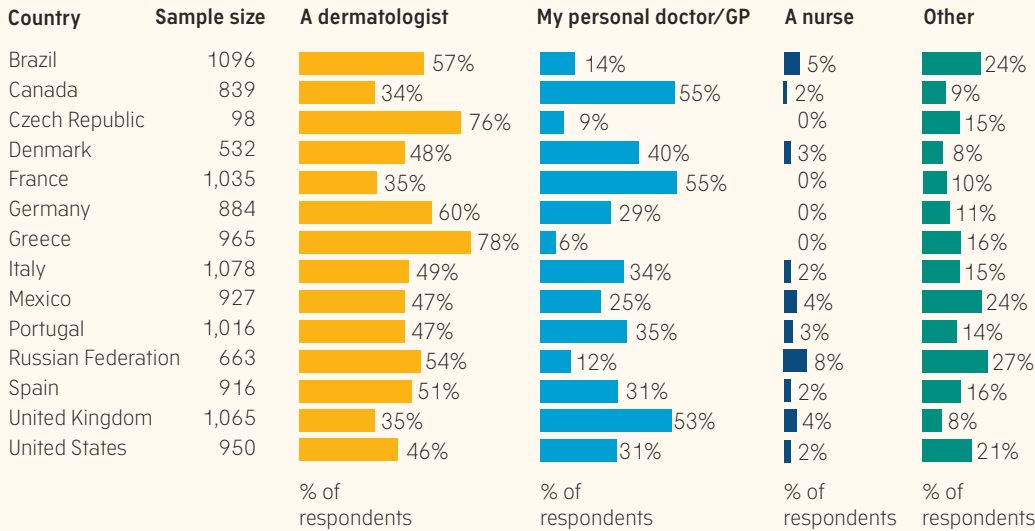
	Annual cost Absen-teeism (\$Million)	% Absen-teeism due to psoriasis	Annual cost Presen-teeism (\$Million)	% Presen-teeism due to psoriasis	Total cost (\$Million)	Total cost per 100.000 people in employ-ment (\$Million)	Total cost as a percentage of GDP
<b>Brazil</b>	\$2,724	37.0%	\$689	55.8%	\$3,413	\$3.8	0.11%
<b>Canada</b>	\$586	34.1%	\$182	44.0%	\$767	\$4.1	0.05%
<b>Denmark</b>	\$531	30.8%	\$44	59.5%	\$574	\$20.2	0.20%
<b>France</b>	\$17,281	39.2%	\$3,215	60.6%	\$20,497	\$74.8	0.71%
<b>Germany</b>	\$14,416	41.4%	\$1,569	46.9%	\$15,985	\$38.5	0.38%
<b>Greece</b>	\$36	30.6%	\$21	63.2%	\$57	\$1.4	0.02%
<b>Italy</b>	\$2,184	42.9%	\$1,027	47.0%	\$3,211	\$14.5	0.13%
<b>Mexico</b>	\$920	63.1%	\$149	62.9%	\$1,070	\$1.9	0.05%
<b>Portugal</b>	\$179	35.4%	\$35	75.6%	\$215	\$4.5	0.06%
<b>Russia</b>	\$2,644	30.6%	\$806	83.5%	\$3,450	\$4.8	0.09%
<b>Spain</b>	\$1,083	32.6%	\$230	60.3%	\$1,313	\$6.9	0.07%
<b>UK</b>	\$2,174	50.8%	\$463	56.4%	\$2,638	\$8.1	0.09%
<b>US</b>	\$22,906	54.8%	\$7,611	68.0%	\$30,517	\$19.6	0.16%



# Healthcare professionals and Psoriasis

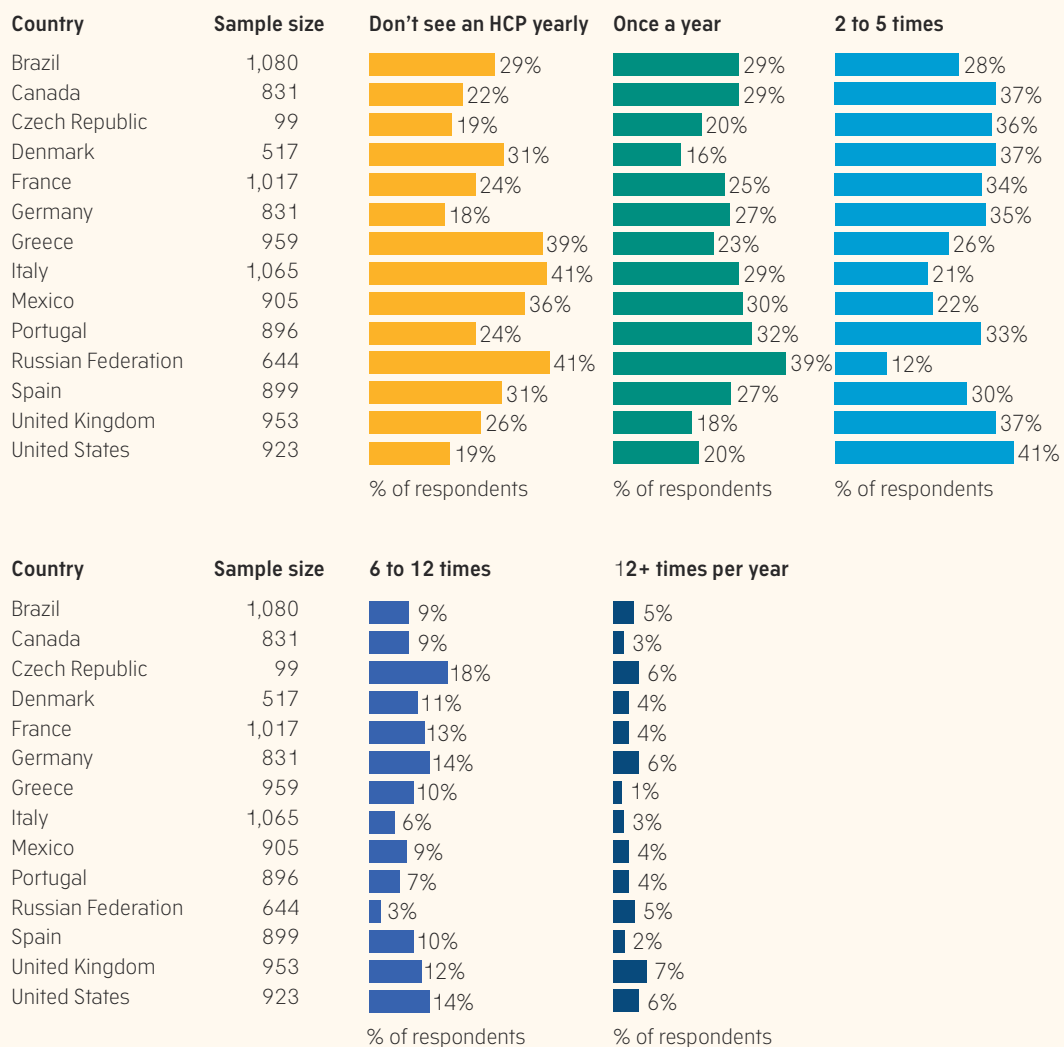
**Figure C.1:** Distribution of type of healthcare professionals engaged for psoriasis by country

“Who is your primary healthcare professional in relation to your psoriasis?”



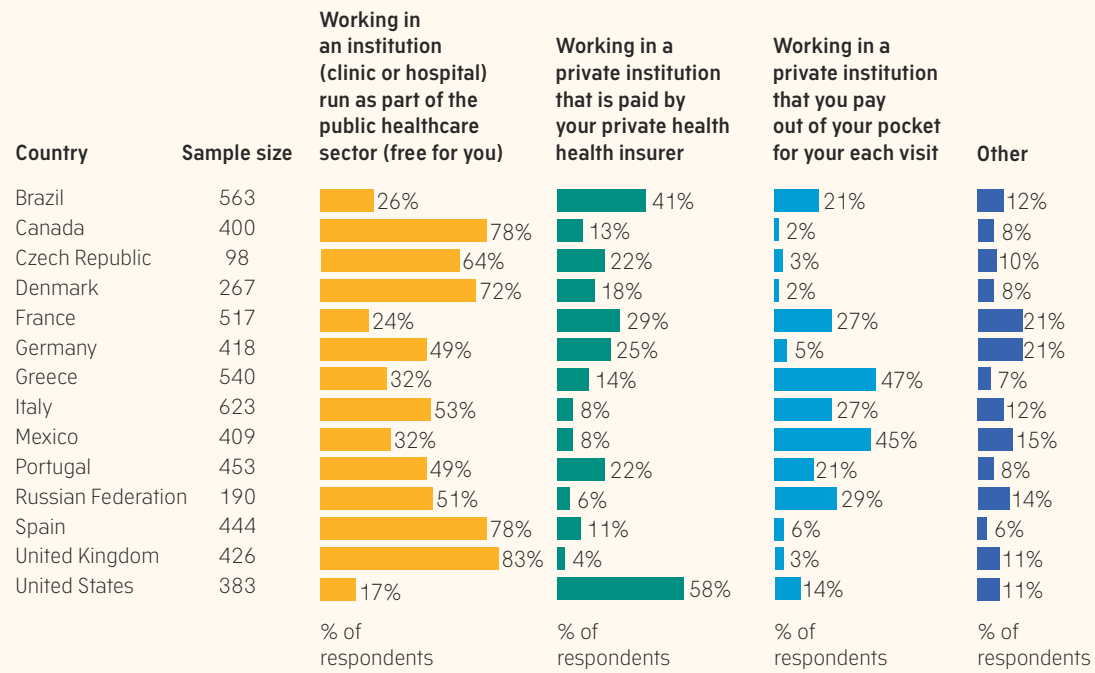
**Figure C.2:** Frequency of visits to healthcare professional for psoriasis by country

“How many times per year are you in contact with healthcare professionals due to your psoriasis?”



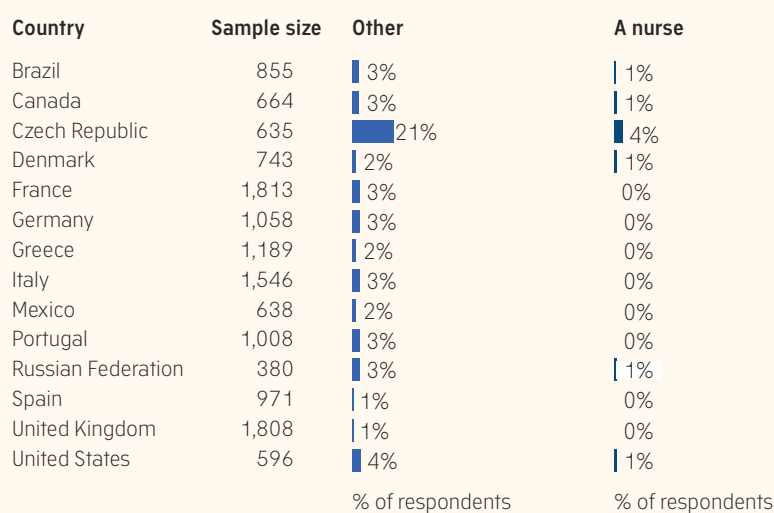
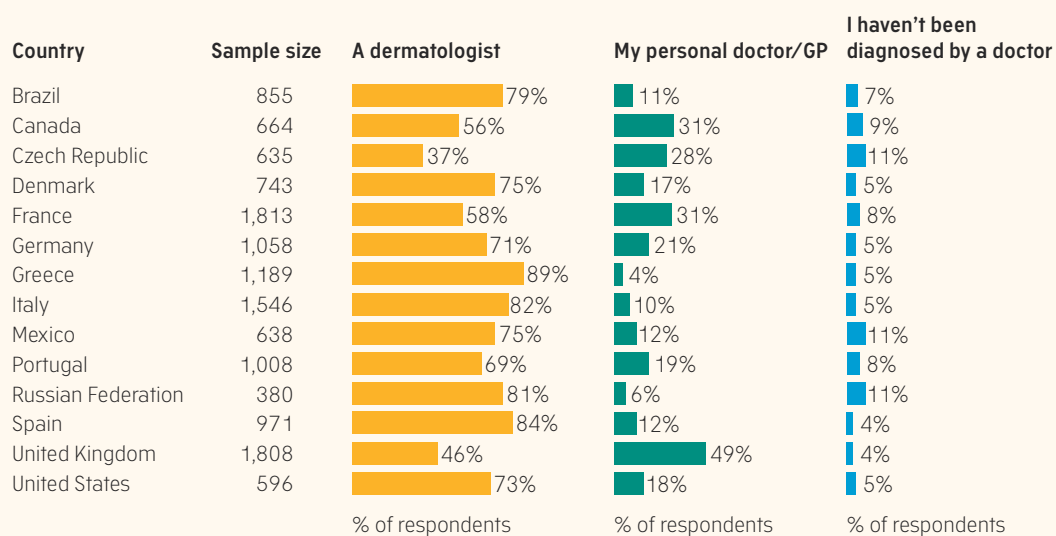
**Figure C.3:** Healthcare Professional institution by country

“Is your primary healthcare professional for your psoriasis?”



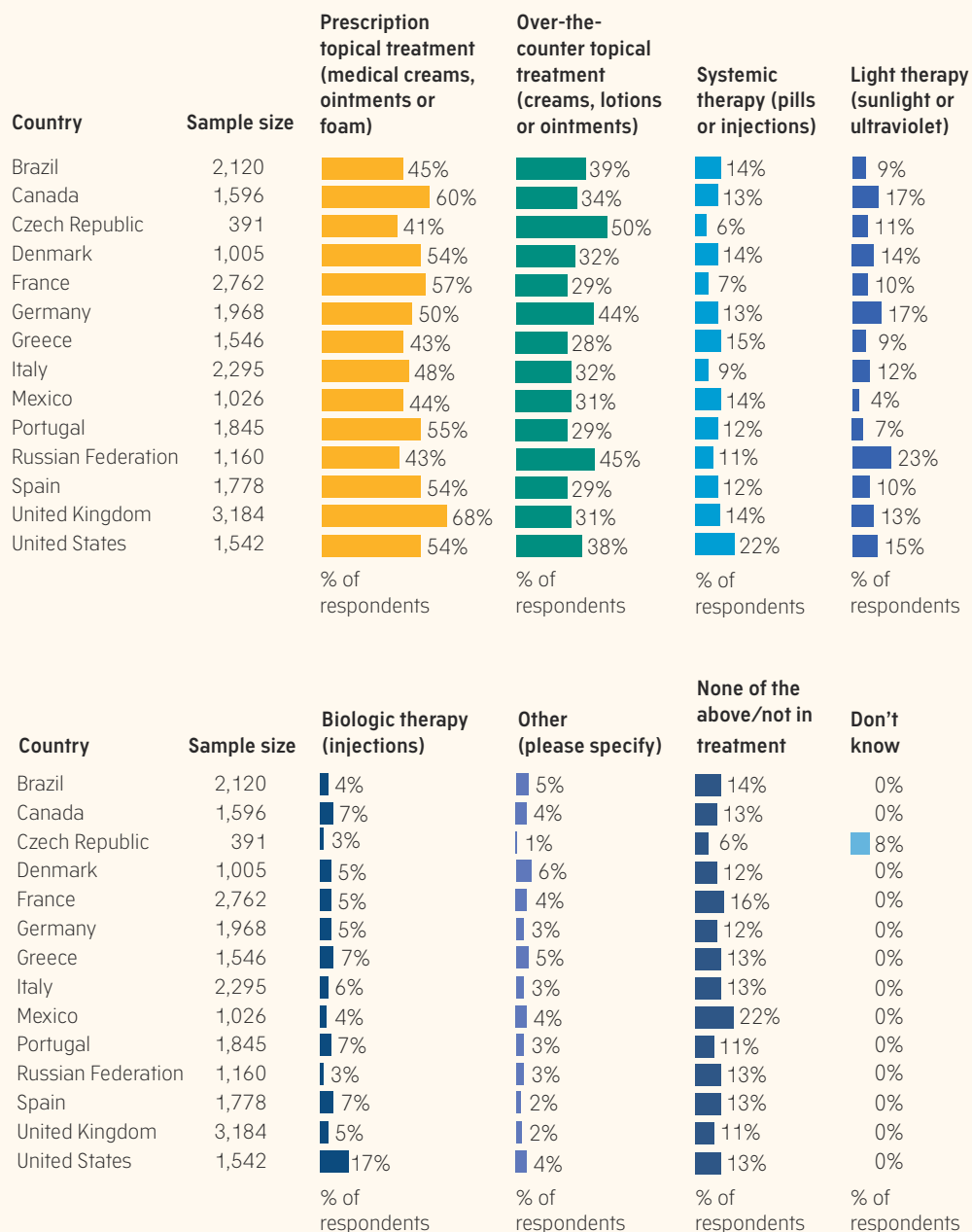
**Figure C.4:** Distribution of who has diagnosed their psoriasis (please note this report is based on self-reported psoriasis)

“Has your psoriasis been diagnosed by:”



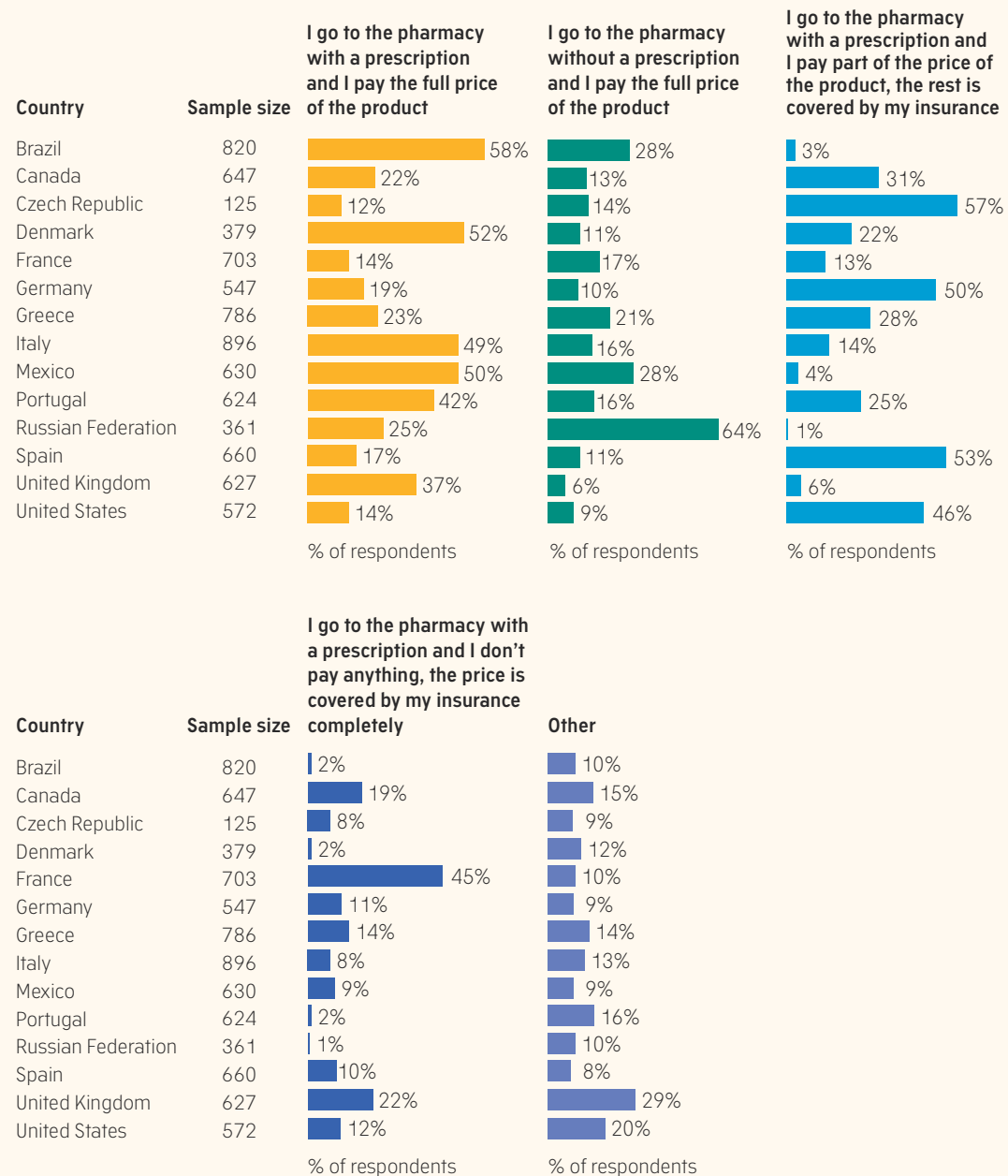
**Figure C.5:** Distribution of treatment type by country

“Which of the following forms of treatments are you currently using (you may use more than one)?”



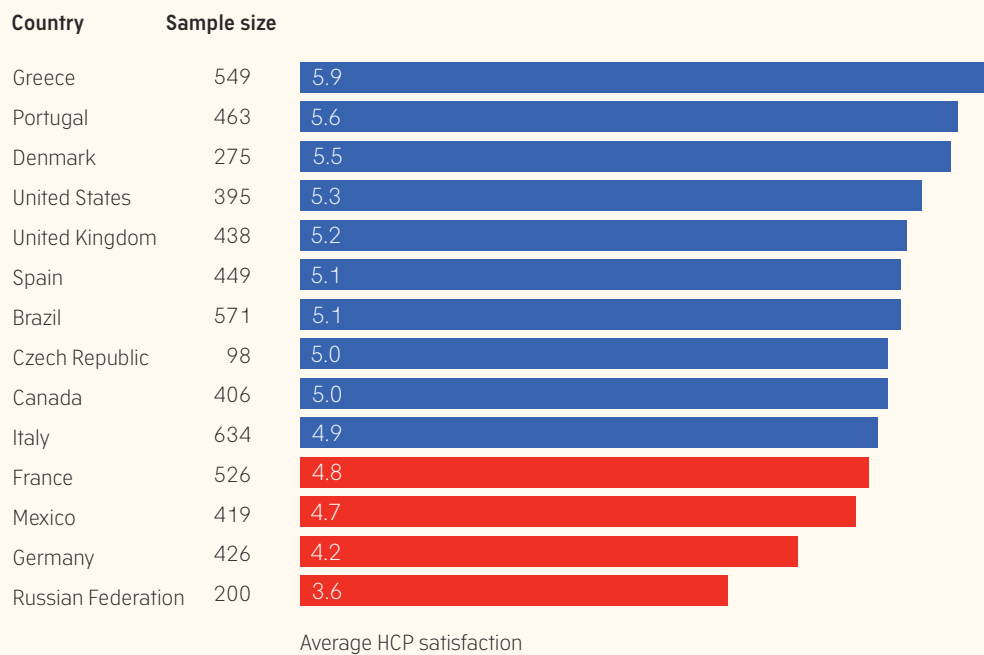
**Figure C.6:** Distribution of how people get and pay for their treatment

“When getting your treatment, which of the statements below best fits your situation?”



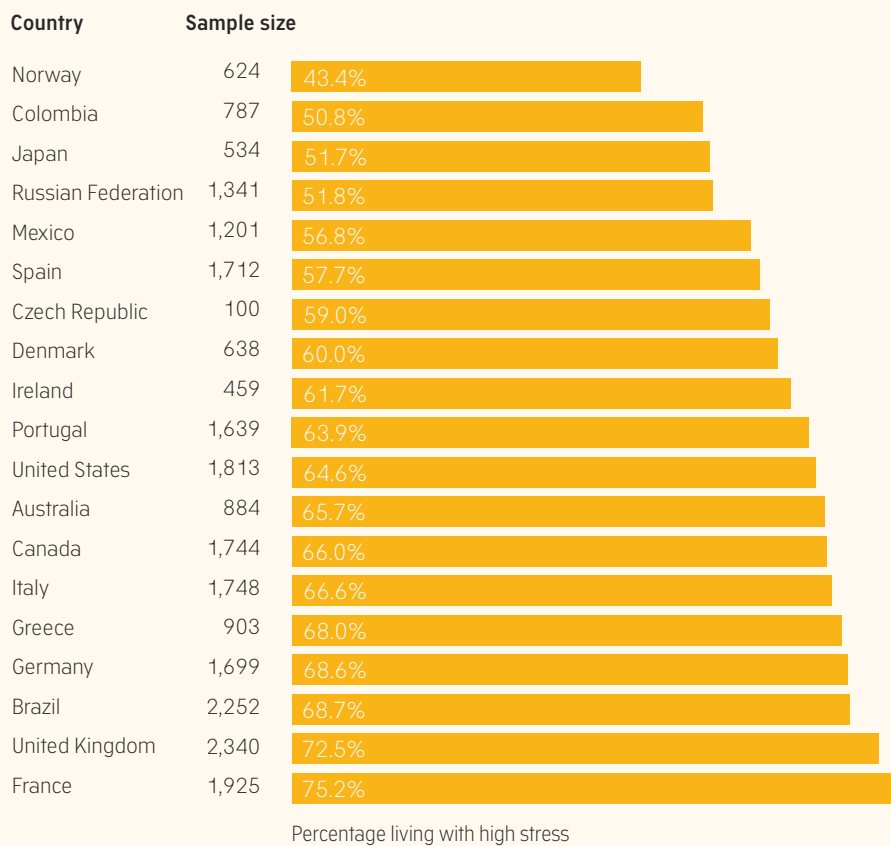
**Figure C.7:** Average levels of satisfaction with healthcare provider in relation to psoriasis by country, as measured on a scale from 0-10

“On a scale from 0 to 10, how satisfied are you overall with your healthcare provider in regards to your psoriasis?”



# Levels of self-reported Stress & Loneliness

**Figure D.1:** Percentage of people living with high stress<sup>1</sup>

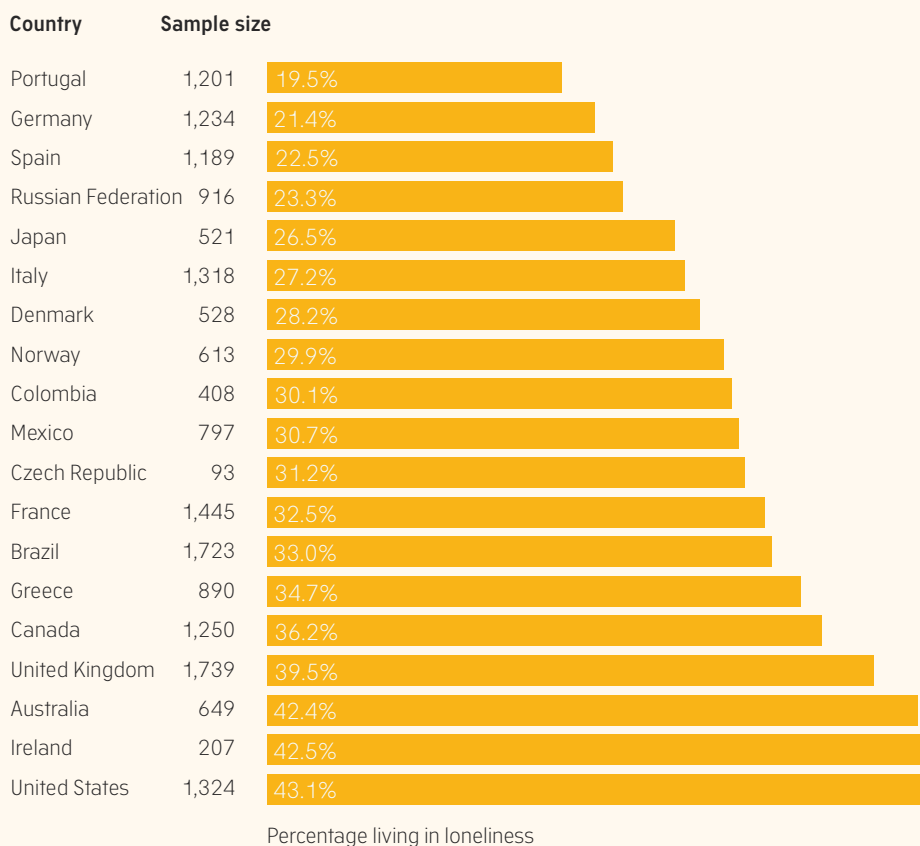


<sup>1</sup> In this case, "high stress" is characterised by a score of 20 or higher on Cohen's Self-perceived Stress Scale. This scale consists of 10 questions related to how the respondent experiences life events and gives an indication of the general resilience of the respondent. The Perceived Stress Scale is not suitable to give an actual stress diagnosis of the individual, but is often used to evaluate and address stress levels in sub-groups of the population.

Source: Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 385-396.



**Figure D.2:** Percentage of people living in loneliness. (The methodology employed for exploring loneliness was a revised version of the UCLA Loneliness Scale, considered by some the 'golden standard'. The methodology consists of three questions related to social isolation and loneliness<sup>2</sup>. The analysis of the results used the most conservative interpretation of the loneliness scores.<sup>3</sup>)



<sup>2</sup>The three questions are: "How often do you feel that you lack companionship?", "How often do you feel left out?", and "How often do you feel isolated from others?", all of which are answered with "often", "some of the time", or "hardly ever". Source: Hughes, M. E., Waite, L. J., Hawkey, L. C., & Cacioppo, J. T. (2004). A short scale for measuring loneliness in large surveys: Results from two population-based studies. *Research on Aging*, 26, 655-672.

<sup>3</sup>Examples of establishing a minimum score for loneliness: A total score of at least '4' (Chalise, Kai, & Saito, 2010), '6' (Hand et al., 2014; Shiovitz-Ezra & Ayalon, 2012) and '7' (Boehlen et al., 2014). We have picked the latter, which is the most conservative approach. It means that the respondents have to answer at least 'often' to one of the 3 questions and at least 'some of the time' to the other two.

Source: Boehlen, F., Herzog, W., Quinzler, R., Haefeli, W. E., Maatouk, I., Niehoff, D., et al. (2014). Loneliness in the elderly is associated with the use of psychotropic drugs. *International Journal of Geriatric Psychiatry*.