



# Outpatient multidisciplinary cancer rehabilitation in Switzerland: a status assessment

Anna Dehler<sup>1</sup> · Sophie Cabaset<sup>1</sup> · Margareta Schmid<sup>1</sup> · Beate Schneider-Mörsch<sup>2</sup> · Nicolas Sperisen<sup>2</sup> · Sabine Rohrmann<sup>1</sup> 

Received: 11 September 2020 / Accepted: 27 April 2021 / Published online: 17 May 2021  
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## Abstract

**Aim** This study aimed to assess the situation of outpatient multidisciplinary cancer rehabilitation in Switzerland as of March 2018.

**Subject and methods** Seventeen programmes providing outpatient cancer rehabilitation were identified; 12 in the German-speaking, 4 in the French-speaking and 1 in the Italian-speaking part of Switzerland. Structure, organisation, type of programme and details on therapies offered were assessed. Difference by language regions and the status of the programme (running vs in development) were examined in a descriptive analysis.

**Results** Centres in the German- and Italian-speaking parts had mostly individual modular programmes with a longer duration (median: 12 weeks) and low intensity (median: 2.5–3 h per week). The French-speaking part had standard programmes with a shorter duration (median: 9 weeks) but higher intensity (median: 5.5 h per week) and a higher number of obligatory modules a patient must attend (median: 2 instead of 1). The language regions also showed differences in duration of therapies, communication, indications and screening instruments.

**Conclusion** Outpatient cancer rehabilitation in Switzerland is characterized by a wide range of programmes. These differences between language regions, as well as between the individual programmes, highlight important variables that may influence the efficiency and the quality of the different programmes; understanding these variables could lead to improvements in cancer rehabilitation in Switzerland.

**Keywords** Oncology · Rehabilitation · Multidisciplinary · Outpatient · Switzerland

## Introduction

An increase in cancer incidence, advances in early detection of cancer and improved treatment options have led to a rising number of individuals surviving cancer, such that cancer is progressively considered a chronic long-term disease (Phillips and Currow 2010). In Switzerland, the number of people suffering from cancer has been increasing over the last

30 years. Current estimations indicate that around 42,000 people living in the country are diagnosed with cancer each year (Heusser et al. 2017). In 2015, the Swiss National Institute for Cancer Epidemiology and Registration (NICER) estimated that around 316,000 people living in Switzerland were cancer survivors (Heusser et al. 2017). People living with cancer often suffer from a variety of physical and psychosocial side effects related to cancer or its treatment. Thus, cancer has become a public health issue, and the rising number of survivors represents a challenge for the Swiss health care system (DeSantis et al. 2014).

Rehabilitation programmes have proven beneficial for patients with chronic diseases such as heart disease (Jolliffe et al. 2001). The positive outcomes observed in these interventions have contributed to the development of cancer-specific rehabilitation programmes in various countries including the Netherlands (Integraal Kankercentrum 2019), Australia (Dennett et al. 2017) and Canada (Canestraro et al. 2013).

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Anna Dehler and Sophie Cabaset are co-first authors

✉ Sabine Rohrmann  
sabine.rohrmann@uzh.ch

<sup>1</sup> Division of Chronic Disease Epidemiology, Epidemiology, Biostatistics and Prevention Institute, University of Zurich, Hirschengraben 82, 8001 Zurich, Switzerland

<sup>2</sup> Krebsliga Schweiz, Effingerstrasse 40, 3001 Bern, Switzerland

Cancer rehabilitation was demonstrated to be effective in reducing the long-term effects of cancer and its treatments. For example, physical activity interventions helped reduce cancer-related fatigue and anxiety and increase the functional quality of life as well as aerobic fitness and muscle strength (Speck et al. 2010). Psychological interventions had a positive effect on decreasing fatigue (Jacobsen et al. 2007) and anxiety (Sanjida et al. 2018), and return-to-work interventions supported cancer survivors in reintegrating into everyday life and in returning to their workplace (de Boer et al. 2011). An important percentage of rehabilitation activities are, however, still of the mono-disciplinary type, this despite the fact that an increasing body of evidence underlines the significance of multidisciplinary interventions, which provide patients with a more holistic and comprehensive treatment of cancer side effects than mono-disciplinary therapies (Pandey and Thomas 2001; Stubblefield et al. 2013; Gilchrist 2017). In Switzerland, inpatient cancer rehabilitation is well established (Ture et al. 2015), but in recent years more outpatient multidisciplinary cancer rehabilitation programmes with different approaches have been developed in all language regions. Switzerland has three main language regions, i.e., German, French and Italian (Federal Statistical Office), and differences between the language regions in Switzerland have already been found in health status and health behaviour (Abel et al. 2013).

The objective of the present study was to assess the situation of outpatient multidisciplinary cancer rehabilitation in Switzerland and identify differences between the programmes, particularly by language region.

## Materials and methods

### Study participants

Our study was conducted between April and December 2018, including running outpatient multidisciplinary cancer rehabilitation programmes and programmes in development as of March 2018. Programmes were identified through the Swiss Cancer League website (Krebsliga Schweiz). For each programme identified, a questionnaire was sent via email to a contact person, who filled out the questionnaire with help from all professionals in the programme.

### Questionnaire

The questionnaire was designed by the study team based on a literature search on Swiss outpatient cancer rehabilitation programmes and covered 18 main topics (organisation of the programme, target group and rehabilitation target, rehabilitation programme structure, therapies, members of the rehabilitation team, details of the five main therapies: physiotherapy, exercise and sports therapy, nutritional counselling,

psychotherapy and psycho-oncology and social counselling, patient pathway, continued education of the rehabilitation team members, programme attendance, financing, advertising, certification, and follow-up programme) and contained a total of 129 discrete, categorical and free-text questions (see [appendices/supplementary](#) data for detailed information).

All answers to the questionnaires were entered in an Excel database. Whenever the data were inconsistent or not clearly understandable, the centres were recontacted and asked for clarification. This study is an assessment of cancer rehabilitation programs in Switzerland. No ethical approval was necessary.

### Statistical analysis

Descriptive statistical analysis was conducted using Microsoft Excel. Categorical variables were given as frequencies; continuous variables were expressed as mean, median, minimum, maximum, and first and third quartiles. In the case of open questions, the answers were clustered in groups and the most frequent answers were assessed. Results were stratified by language regions and programme status (running programmes vs programmes in development). The language regions were compared by the percentage of positive answers.

## Results

### Programmes included in the study

In total, 17 different programmes were identified and contacted for the study: 12 programmes in the German-speaking part (CH-DE), four in the French-speaking part (CH-FR) and one in the Italian-speaking part (CH-IT) of Switzerland. In the CH-IT part, the programme was conducted at five different locations but was considered as one programme. Thirty-three percent of CH-DE programmes and 25% of CH-FR programmes were still in development in March 2018.

### Organisation of the programmes

The cantonal cancer leagues were the main supporters of outpatient cancer rehabilitation programmes in Switzerland (Table 1). More CH-DE programmes cooperated with cantonal cancer leagues than the Swiss cancer league, whereas all CH-FR programmes were partners of the Swiss Cancer League and only half of them partnered with cantonal cancer leagues. In CH-IT, the cantonal cancer league had built up the programme in partnership with hospitals and therapists.

Programmes in CH-FR mostly had an oncologist as a programme leader (Table 1). In contrast, programmes in CH-DE were mostly led by physicians specialised in general internal medicine, followed by oncologists. In CH-IT, the programme

**Table 1** Overview of Swiss outpatient cancer rehabilitation by language region (n<sub>total</sub> = total number of answers received)

	CH-DE % (n/n <sub>total</sub> )	CH-FR % (n/n <sub>total</sub> )	CH-IT % (n/n <sub>total</sub> )
<b>Partnerships and cooperations</b>			
Rehabilitation clinic	55% (6/11)	0% (0/4)	100% (1/1)
Cancer league Switzerland	25% (3/12)	100% (4/4)	0% (0/1)
Cantonal cancer league	75% (9/12)	50% (2/4)	100% (1/1)
Regional cancer league	17% (2/12)	0% (0/4)	0% (0/1)
Therapists	8% (1/12)	50% (2/4)	100% (1/1)
Specialized clinic	0% (0/12)	0% (0/4)	0% (0/1)
University (–hospital)	25% (3/12)	25% (1/4)	0% (0/1)
Regional hospital	8% (1/12)	25% (1/4)	100% (1/1)
Other	0% (0/12)	50% (2/4)	0% (0/1)
<b>Specialist field of the medical lead</b>			
GIM (general internal medicine)	75% (9/12)	25% (1/4)	100% (1/1)
Oncology	67% (8/12)	75% (3/4)	100% (1/1)
PMR (physical medicine and rehabilitation)	17% (2/12)	25% (1/4)	0% (0/1)
Other	36% (4/11)	0% (0/4)	100% (1/1)
<b>Coordination</b>			
Coordination present	100% (12/12)	100% (4/4)	100% (1/1)
Specialist in oncology, GIM, PMR or other medical fields	30% (3/10)	50% (2/4)	0% (0/1)
(Oncology) nursing	40% (4/10)	25% (1/4)	100% (1/1)
Physiotherapy	60% (6/10)	50% (2/4)	0% (0/1)
<b>Screening instrument</b>			
Distress thermometer	42% (5/12)	0% (0/4)	100% (1/1)
No screening instrument present	25% (3/12)	33% (1/3)	0% (0/1)
Other	36% (4/11)	67% (2/3)	100% (1/1)
<b>Prognosis of the patient</b>			
Palliative	91% (10/11)	50% (2/4)	100% (1/1)
Curative	100% (11/11)	100% (4/4)	100% (1/1)
<b>Indications for the necessity of rehabilitation of the patient</b>			
Limited functionality/mobility in daily life (respiratory problems, neuropathies, lymphedema, incontinence, walking insecurity)	91% (10/11)	100% (3/3)	100% (1/1)
Limited physical performance / activity in everyday life	91% (10/11)	100% (3/3)	100% (1/1)
Special nutritional situation (functional disorders in the ENT (ears, nose and throat) / gastrointestinal tract, malnutrition, weight loss / weight gain, etc.)	80% (8/10)	100% (3/3)	100% (1/1)
Existing emotional problems (anxiety, anger, sadness, depressive mood, etc.)	82% (9/11)	100% (3/3)	100% (1/1)
Existing questions about the social, professional or financial situation	82% (9/11)	100% (3/3)	100% (1/1)
Limited ability to act in personal, domestic and/or professional environment	82% (9/11)	100% (3/3)	100% (1/1)
Quality of life restricted as a result of the disease or therapies	91% (10/11)	100% (3/3)	100% (1/1)
Dealing with the consequences of illness or therapy difficult	91% (10/11)	100% (3/3)	100% (1/1)
Pain	80% (8/10)	100% (3/3)	100% (1/1)
Fatigue	91% (10/11)	100% (3/3)	100% (1/1)
Questions/concerns about sexuality	55% (6/11)	100% (3/3)	100% (1/1)
Difficulty speaking or swallowing	55% (6/11)	67% (2/3)	100% (1/1)
Special care situation (port, stoma, tracheostoma)	55% (6/11)	67% (2/3)	0% (0/1)
<b>Minimal requirements for the patient</b>			
Indications lead to a restriction of participation in everyday life and profession	90% (9/10)	100% (3/3)	100% (1/1)
Realistic objectives	100% (10/10)	100% (3/3)	100% (1/1)
Motivation of the patient and environment given	100% (10/10)	100% (3/3)	100% (1/1)

**Table 1** (continued)

		CH-DE % (n/n <sub>total</sub> )	CH-FR % (n/n <sub>total</sub> )	CH-IT % (n/n <sub>total</sub> )
Mobility not restricted		10% (1/10)	67% (2/3)	0% (0/1)
Sufficient medical and nursing support on an outpatient basis		90% (9/10)	100% (3/3)	100% (1/1)
Outpatient rehabilitation offer reachable from place of residence		80% (8/10)	100% (3/3)	100% (1/1)
Sufficient therapy intensity in outpatient setting		90% (9/10)	100% (3/3)	100% (1/1)
Dissociation from the social environment not desired		60% (6/10)	100% (3/3)	100% (1/1)
Location of the rehabilitation				
One location		73% (8/11)	50% (2/4)	0% (0/1)
Several locations		27% (3/11)	50% (2/4)	100% (1/1)
Form of the programme				
Individual modular		75% (9/12)	25% (1/4)	100% (1/1)
Standard programme		25% (3/12)	50% (2/4)	0% (0/1)
Start of the rehabilitation				
After diagnosis and before acute medical treatment		58% (7/12)	67% (2/3)	100% (1/1)
During acute medical treatment		100% (12/12)	67% (2/3)	100% (1/1)
After acute medical treatment		92% (11/12)	100% (3/3)	100% (1/1)
Communication				
“Reha-Logbuch” (Krebsliga Schweiz 2017) (tool developed by the Swiss Cancer league)		36% (4/11)	0% (0/3)	100% (1/1)
Electronic documents		64% (7/11)	33% (1/3)	0% (0/1)
Team meetings		45% (5/11)	67% (2/3)	100% (1/1)
Other		45% (5/11)	0% (0/3)	0% (0/1)
Follow-up programme				
Providing a follow-up programme		80% (8/10)	33% (1/3)	100% (1/1)
Forms of therapy offered by type of therapy				
Physiotherapy	Group therapy	60% (6/10)	67% (2/3)	0% (0/1)
	Individual therapy	100% (10/10)	67% (2/3)	100% (1/1)
	Both	60% (6/10)	67% (2/3)	0% (0/1)
Exercise and sports therapy	Group therapy	80% (8/10)	100% (1/1)	0% (0/1)
	Individual therapy	33% (3/9)	100% (1/1)	0% (0/1)
	Both	44% (4/9)	100% (1/1)	0% (0/1)
Nutrition therapy	Group therapy	0% (0/8)	50% (1/2)	0% (0/1)
	Individual therapy	88% (7/8)	100% (2/2)	100% (1/1)
	Both	0% (0/8)	50% (1/2)	0% (0/1)
Psychotherapy and psycho-oncology	Group therapy	33% (3/9)	100% (1/1)	0% (0/1)
	Individual therapy	80% (8/10)	0% (0/1)	100% (1/1)
	Both	33% (3/9)	0% (0/1)	0% (0/1)
Social counselling	With family/partner	71% (5/7)	0% (0/1)	100% (1/1)
	Individual therapy	86% (6/7)	0% (0/1)	100% (1/1)
	Both	43% (3/7)	0% (0/1)	100% (1/1)
Occupational therapy	Group therapy	17% (1/6)	- (0/0)	0% (0/1)
	Individual therapy	67% (4/6)	- (0/0)	100% (1/1)
	Both	17% (1/6)	- (0/0)	0% (0/1)
Dropout rates				
0–20%		63% (5/8)	100% (2/2)	0% (0/1)
20–40%		14% (1/7)	0% (0/2)	0% (0/1)
40–60%		14% (1/7)	0% (0/2)	0% (0/1)
60–80%		0% (0/7)	0% (0/2)	100% (1/1)
80–100%		0% (0/7)	0% (0/2)	0% (0/1)

**Table 1** (continued)

	CH-DE % (n/n <sub>total</sub> )	CH-FR % (n/n <sub>total</sub> )	CH-IT % (n/n <sub>total</sub> )
<b>Reasons for the dropouts</b>			
Side effects of cancer therapy	100% (7/7)	0% (0/2)	100% (1/1)
Costs	14% (1/7)	0% (0/2)	0% (0/1)
Dissatisfaction with the programme	14% (1/7)	0% (0/2)	0% (0/1)
Worsening of health or death	57% (4/7)	100% (2/2)	100% (1/1)
Other	43% (3/7)	50% (1/2)	100% (1/1)
<b>Financing</b>			
Self-financed by patient	33% (3/9)	50% (1/2)	0% (0/1)
Patient support fund	22% (2/9)	50% (1/2)	100% (1/1)
Basic health insurance single invoice	100% (10/10)	100% (2/2)	100% (1/1)
Supplementary health insurance single invoice	50% (5/10)	50% (1/2)	100% (1/1)
Other	9% (1/11)	50% (1/2)	0% (0/1)
Obtain a cost coverage request from the health insurance for specific therapies	70% (7/10)	0% (0/2)	100% (1/1)
<b>Advertisement</b>			
Flyer/leaflets	83% (10/12)	100% (4/4)	100% (1/1)
Advertisements in magazines	9% (1/11)	75% (3/4)	0% (0/1)
Websites	83% (10/12)	75% (3/4)	100% (1/1)
Events	27% (3/11)	50% (2/4)	0% (0/1)
Other	25% (3/12)	25% (1/4)	100% (1/1)

leader was specialised in general internal medicine, oncology or another discipline. Note that programme leaders can have several education and specialisation areas; thus, the sum of all specialisations can exceed 100%.

All programmes had a coordinator (Table 1). Physiotherapists were coordinators in 60% of CH-DE and 50% of the CH-FR programmes. The other 50% of coordinators in CH-FR were medical specialists. In CH-IT, the coordinator had an education in nursing.

### Target group and indications

CH-DE and CH-IT programmes accepted patients with palliative or curative prognosis (Table 1). All CH-FR centres accepted patients with a curative prognosis, but only 50% accepted patients with palliative prognosis.

The most frequently used screening instrument in the CH-DE part was the distress thermometer, whereas CH-FR mostly used discipline-specific tests to screen their patients. CH-IT used the distress thermometer and other discipline-specific tests.

There were a variety of indications for patients in a programme and they were similar across language regions (Table 1). Programmes in CH-FR tended to have three more indications for patients than those in CH-DE: questions/concerns about sexuality, difficulty speaking or swallowing,

and special care situation (port, stoma, tracheostoma, etc.); the first two were also common in CH-IT.

All language regions had most minimal requirements for patients in common (Table 1), but CH-FR programmes also tended to have the additional minimal requirement that “patients should not have restricted mobility”, which CH-DE and CH-IT did not have.

### Further details about the programme

The different elements of the rehabilitation programmes in CH-DE were conducted mostly in one place, whereas in CH-FR, programmes operated in one or several locations (Table 1). Rehabilitation in CH-IT took place at several locations. Most programmes were provided by cantonal hospitals.

CH-DE and CH-IT mostly had individual modular programmes (various modules over a period of up to 1 year), whereas in CH-FR standard programmes (defined program with core modules and further modules as required) were as common as individual modular programmes (Table 1).

CH-DE and CH-IT had longer programmes with lower intensity (Table 2). CH-FR programmes, on the contrary, had shorter duration with higher intensity. The number of mandatory modules a patient must attend was higher in CH-FR than in CH-DE and CH-IT.

It was found that there were three starting points for a programme: after diagnosis and before acute medical

**Table 2** Regional differences in length and intensity of the programmes by comparing median, first quartile (Q1) and third quartile (Q3) ( $n_{\text{total}}$  = total number of answers received)

		$n_{\text{total}}$	Median (Q1, Q3)
Length of programme (in weeks)	CH-DE	10	12 (12, 28)
	CH-FR	3	9 (6, 11)
	CH-IT	1	12 (12, 12)
Intensity (hours/week)	CH-DE	10	3 (2, 4)
	CH-FR	2	6 (4, 7)
	CH-IT	1	3 (3, 3)
Numbers of mandatory modules a patient must attend	CH-DE	9	1 (1, 1)
	CH-FR	3	2 (2, 5)
	CH-IT	1	1 (1, 1)

treatment, during acute medical treatment, and after acute medical treatment. The three starting points were differently favoured in the three language regions (Table 1). The repetition of the programme was possible in all language regions.

Concerning communication within the rehabilitation team, CH-DE programmes mostly put electronic documents to use, whereas CH-FR programmes preferred rehabilitation team meetings (Table 1). In CH-IT, team meetings were conducted and additionally the “Reha-Logbuch” of the Swiss Cancer League was used (Krebsliga Schweiz 2017). The rehabilitation team meetings took place twice as often in CH-FR as in CH-DE (CH-FR: every 14 days;  $n = 3$ , CH-DE: every 32.5 days;  $n = 2$ ). Most CH-DE and CH-IT programmes provided a follow-up programme, whereas most CH-FR

programmes did not (Table 1). The follow-up programmes mostly consisted of fitness or training subscriptions.

### Therapies

Five therapies were common in all programmes, i.e., physiotherapy (total: 94%), exercise and sports therapy (total: 88%), nutrition therapy (total: 81%), psychotherapy/psycho-oncology (total: 75%) and social counselling (total: 75%). CH-FR programmes offered three additional therapies (design and paint therapy, complementary medicine and others) more than the common CH-DE programme (Table 3). CH-IT provided occupational therapy instead of exercise and sports therapy, and additional therapies such as complementary

**Table 3** Therapies offered and team members in Swiss outpatient cancer rehabilitation programmes by language regions ( $n_{\text{total}}$  = total number of answers received)

Therapies	CH-DE % (n/ $n_{\text{total}}$ )	CH-FR % (n/ $n_{\text{total}}$ )	CH-IT % (n/ $n_{\text{total}}$ )	Team	CH-DE % (n/ $n_{\text{total}}$ )	CH-FR % (n/ $n_{\text{total}}$ )	CH-IT % (n/ $n_{\text{total}}$ )
Physiotherapy	100% (12/12)	67% (2/3)	100% (1/1)	Physiotherapist	100% (11/11)	100% (3/3)	100% (1/1)
Exercise and sports therapy	100% (12/12)	67% (2/3)	0% (0/1)	Exercise and sports therapist	60% (6/10)	50% (1/2)	0% (0/1)
Nutrition therapy	75% (9/12)	100% (3/3)	100% (1/1)	Nutritional therapist	89% (8/9)	100% (3/3)	100% (1/1)
Psychotherapy and psycho-oncology	75% (9/12)	67% (2/3)	100% (1/1)	Psycho-oncologist	73% (8/11)	0% (0/3)	100% (1/1)
				Psychiatrist	82% (9/11)	33% (1/3)	100% (1/1)
Social counselling	67% (8/12)	100% (3/3)	100% (1/1)	Social counsellor	90% (9/10)	67% (2/3)	100% (1/1)
Occupational therapy	33% (3/12)	33% (1/3)	100% (1/1)	Occupational therapist	67% (6/9)	33% (1/3)	100% (1/1)
Design and paint therapy	17% (2/12)	67% (2/3)	0% (0/1)	Design and paint therapist	18% (2/11)	67% (2/3)	0% (0/1)
Complementary medicine	25% (3/12)	67% (2/3)	100% (1/1)	Specialist in comp. medicine	36% (4/11)	67% (2/3)	100% (1/1)
Pain therapy	42% (5/12)	33% (1/3)	100% (1/1)	Pain therapist	45% (5/11)	0% (0/3)	100% (1/1)
Sexual therapy	0% (0/12)	33% (1/3)	100% (1/1)	Sexual therapist	9% (1/11)	33% (1/3)	100% (1/1)
Music therapy	8% (1/12)	33% (1/3)	0% (0/1)	Music therapist	0% (0/11)	33% (1/3)	0% (0/1)
Speech therapy	42% (5/12)	33% (1/3)	100% (1/1)	Speech therapist	36% (4/11)	33% (1/3)	100% (1/1)
Spiritual counselling	50% (6/12)	33% (1/3)	100% (1/1)	Pastoral worker	55% (6/11)	0% (0/3)	100% (1/1)
Others	8% (1/12)	67% (2/3)	0% (0/1)				
				Oncology nurse	70% (7/10)	33% (1/3)	100% (1/1)
				Medical specialist	100% (10/10)	33% (1/3)	100% (1/1)



medicine, pain therapy, sexual therapy, speech therapy and spiritual counselling.

The team composition was very different in each region. Most CH-FR programmes did not include an oncology nurse or a medical specialist, whereas most CH-DE programmes did. The CH-IT team consisted of professionals of the mentioned therapies with an additional oncology nurse and medical specialist.

All programmes offered different forms of therapy (individual, group therapy or both). In CH-DE and CH-IT, the individual therapy setting was favoured for physiotherapy and occupational therapy. For exercise and sports therapy, group therapy was dominant in CH-DE, whereas CH-FR used all therapy forms. Nutrition therapy was mostly conducted in an individual setting in all parts of Switzerland. Concerning psychotherapy/psycho-oncology, programmes in CH-DE and CH-IT mostly provided individual psychotherapy, whereas CH-FR programmes more often provided group therapy (Table 1). Social counselling was given for patients and their family members/partners in CH-DE and CH-IT. Although social counselling is offered in CH-FR, the form is not specified.

The duration of the therapies differed by language region, such that CH-DE programmes had the shortest and CH-FR and CH-IT programmes had longer durations (CH-DE: median 7 weeks, CH-FR: median 9 weeks, CH-IT: median 16 weeks; see Table 4 for details). Comparing the different

therapies to each other, physical therapies such as physiotherapy usually had a longer duration (median: 12 weeks), and psychosocial therapies and counselling such as psychotherapy were of shorter duration (median: 5 weeks).

The number of prescriptions for the therapies differed by region; CH-DE had the lowest number of prescriptions, with on average one prescription. The numbers in CH-FR and CH-IT differed depending on the therapy.

The number of units per prescription was on average lower for psychosocial therapies and counselling (median: 2 units) than for “physical” therapies (median: 9 units). The duration of a unit was generally shorter in CH-DE and CH-IT than in CH-FR (CH-DE: median 53 min, CH-IT: median 45 min, CH-FR: median 90 min). “Physical therapies” lasted 45 min (median) and psychosocial therapies and counselling 60 min (median).

### Dropouts

In CH-DE and CH-FR, most programmes reported that 0–20% of the patients did not finish the programme. In CH-IT, 60–80% of the patients did not finish the programme (Table 1). The main reason for these dropouts was worsening of health or death. CH-DE and CH-IT programmes additionally mentioned the side effects of the disease or its treatment as justification for dropouts (Table 1).

**Table 4** Regional differences when comparing therapies by quartile 1 (Q1), 3 (Q3) and the median (duration in weeks, number of prescriptions of therapies, number of units per prescription, duration of a unit (min) (n<sub>total</sub> = total number of answers received)

		Duration in weeks		Number of prescriptions of therapies		Number of units per prescription		Duration of a unit (in minutes)	
		n <sub>total</sub>	Median (Q1,Q3)	n <sub>total</sub>	Median (Q1,Q3)	n <sub>total</sub>	Median (Q1,Q3)	n <sub>total</sub>	Median (Q1,Q3)
Physiotherapy	CH-DE	10	9 (6, 9)	10	1 (1, 2)	10	9 (9, 9)	10	30 (30, 35)
	CH-FR	3	10 (5, 11)	3	9 (5, 12)	2	4.5 (2, 7)	3	45 (23, 45)
	CH-IT	1	16 (16, 16)	1	27 (27, 27)	1	9 (9, 9)	1	45 (45, 45)
Exercise- and sports therapy	CH-DE	10	12 (12, 12)	9	1 (1, 2)	7	18 (10, 30)	9	53 (45, 60)
	CH-FR	1	9 (9, 9)	1	18 (18, 18)	1	9 (9, 9)	1	90 (90, 90)
	CH-IT	0	–	0	–	0	–	0	–
Nutrition therapy	CH-DE	6	6 (4, 11)	7	1 (1, 1)	6	6 (5, 7)	7	53 (50, 60)
	CH-FR	3	8 (5, 10)	2	7 (7, 8)	2	7 (7, 8)	2	60 (53, 68)
	CH-IT	1	16 (16, 16)	1	6 (6, 6)	1	6 (6, 6)	1	45 (45, 45)
Psycho (oncology)- therapy	CH-DE	7	8 (8, 8)	7	1 (1, 2)	7	2 (1, 3)	7	60 (60, 68)
	CH-FR	1	9 (9, 9)	1	6 (6, 6)	1	6 (6, 6)	1	120 (120, 120)
	CH-IT	1	16 (16, 16)	0	–	0	–	0	–
Social counselling	CH-DE	6	1 (0, 1)	6	1 (1, 1)	6	2 (1, 2)	7	60 (34, 60)
	CH-FR	1	1 (1, 1)	1	1 (1, 1)	1	1 (1, 1)	1	120 (120, 120)
	CH-IT	1	12 (12, 12)	0	–	0	–	0	–
Occupational therapy	CH-DE	4	0 (0, 0)	4	0 (0, 0)	4	0 (0, 0)	5	0 (0, 0)
	CH-FR	0	–	0	–	0	–	0	–
	CH-IT	1	12 (12, 12)	1	3 (3, 3)	0	–	1	45 (45, 45)

## Financing and advertisements

All language regions used the basic health insurance single invoice to finance their programmes (Table 1). Only CH-DE and CH-IT programmes obtained a cost coverage request from the health insurance for specific therapies.

The average programme in all language regions advertised by flyers/leaflets or a website (Table 1). CH-FR additionally put advertisements in magazines.

## Discussion

Outpatient multidisciplinary cancer rehabilitation programmes in Switzerland have shown considerable diversity in this study. We observed that the general structure of multidisciplinary outpatient cancer rehabilitation programmes in CH-DE and CH-IT were more similar to each other than to CH-FR programmes. Both the CH-DE and CH-IT programmes provided mostly individual modular programmes for patients undergoing palliative and curative treatment. The programmes were longer, with lower intensity, compared to CH-FR, which offered shorter programmes with higher intensity. On the contrary, programmes in the CH-FR part more often provided a standard programme for only patients undergoing curative treatment. The patients in the CH-FR part also had to attend a higher number of mandatory modules compared to the CH-DE and CH-IT parts. These differences probably corresponded to the higher incidence of standard programmes in the CH-FR part.

The Swiss national cancer plan has the goal of strengthening cancer rehabilitation (Gasser et al. 2017). At an international level, rehabilitation is not a well-established part of cancer control plans. The EUROCHIP-3 study results showed that in 2011, 18 out of 25 European Union countries (72%) reported cancer rehabilitation in their national cancer plan (Niinepuu and Veerus 2014). However, this study also revealed that only four European Union countries, i.e., Denmark, Italy, the Netherlands and Spain, had cancer rehabilitation guidelines in 2011. In Sweden and France, cancer rehabilitation guidelines were being developed at that time (Niinepuu and Veerus 2014). Unfortunately, our results could not be compared to the EUROCHIP-3-developed indicators for describing cancer rehabilitation (Baili et al. 2013), as our study looked at the provider's perspective of cancer rehabilitation. Based on EUROCHIP-3, it appears that the importance of cancer rehabilitation is being recognised but the implementation is still in progress. A study from 2010 investigating cancer rehabilitation from the Nordic and European point of view (Hellbom et al. 2011) showed that cancer rehabilitation is carried out in different settings depending on the differences in social security and health care systems. It ranges from primarily outpatient (Sweden, Norway, the Netherlands) to weekly courses (Finland, Denmark, Sweden, Norway, Iceland) and three-week inpatient programmes

(Germany). The Netherlands comes closest to the Swiss programmes, with a long-established multidimensional outpatient rehabilitation programme lasting 12 weeks, with physical training and psychoeducation.

## Limitations and strengths

Our study provides an important first step to identify important variables and differences in multidisciplinary outpatient cancer rehabilitation programmes in Switzerland. The direct contact with the participating centres allowed for resolving errors or miscommunication very easily.

Our study provides an overview of existing programmes in Switzerland. However, the number of existing programmes was small, especially in CH-IT, where only one programme existed, which was carried out in five centres. This reduced the statistical power, which led to the decision to only do descriptive analysis.

Further limitations have to be mentioned. All data were self-reported by the participating programmes, but as the questions were mostly centred on the facts of the programme, few biased answers are expected. Furthermore, the questionnaire was also not always fully filled out, which led to very few or no answers to some questions. During the assessment, some programmes were still under development, so it cannot always be safely assumed that they continue working in practice as planned. As the participating programmes were identified by the Swiss Cancer League website, other programmes might have been missed and, thus, were not included.

## Conclusion and future orientation

The assessment of multidisciplinary outpatient cancer rehabilitation in Switzerland revealed a wide range of different programmes with major differences in type and length of the programme, duration of therapies, communication, indications and screening instruments. These differences indicate a need for performance and quality criteria to ensure the best possible treatment of cancer rehabilitation patients in Switzerland.

The study only describes the current situation in Switzerland from the perspective of the providers and does not take into account the patients' point of view or the efficiency of the different programmes. Future studies in these directions could provide further insight.

**Supplementary Information** The online version contains supplementary material available at <https://doi.org/10.1007/s10389-021-01589-9>.

**Acknowledgements** We thank all centres who participated in this study.

**Authors' contribution** Study conception and design: SC, MS, BSM, SR; Material preparation and data collection: all; Data analysis: AD; First draft of the manuscript: AD. All authors read and approved the final manuscript.



**Funding** Open Access funding provided by Universität Zürich. This study was funded by the Swiss Cancer League (KLS).

**Data availability** All material has been collected anonymously and is available upon reasonable request.

## Declarations

**Conflict of interest** Beate Schneider-Mörsch and Nicolas Sperisen are employees of Krebsliga Schweiz. All other authors declare no conflicts of interest.

**Ethics approval** This article does not contain any studies with human participants or animals performed by any of the authors.

**Consent to participate** By participating, all participants consented, knowing that all information was collected completely anonymously.

**Consent for publication** All authors approved the final version of the manuscript.

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