



June 2021

Welcome to the International Confederation of Cardiorespiratory Physical Therapists (ICCrPT) newsletter: June 2021

Have a nice summer!



Meet the Current Executive Committee

ICCrPT Executive Committee (2019 to 2023):

President: Brenda O'Neill (United Kingdom)

Vice President: Karin Wadell (Sweden)

Secretary: Shirley Ngai (Hong Kong)

Treasurer: Alison Lupton-Smith (South Africa)

Members (in alphabetical order): Anna Christakou (Greece), Andreas Freund (Germany), Anri Human (South Africa), Kentaro Kamiya (Japan), Tania Larsen (Canada), Harriet Shannon (United Kingdom)

Please contact the executive committee through the website at info@cardioresp.physio

The executive committee member highlighted in this edition is

Dr. Kentaro Kamiya



Kentaro Kamiya is a physiotherapist and is a Professor in the Department of Physiotherapy Kitasato University in Japan. He received a bachelor's degree from the Physical Therapy Department of Kitasato University in 2002, and a Master's degree from the University's graduate school in 2004. He then worked as a physiotherapist at Kitasato University Hospital from 2004 to 2017, mainly in the clinical role of cardiac rehabilitation. He also obtained a Ph.D. at the Graduate School of Kitasato University. In 2017, he was appointed as a lecturer at Kitasato University, and since 2020, he has been active as a principal researcher of various clinical research in addition to teaching physiotherapy to undergraduates and graduate students as a professor. In regard to research achievements, he has published over 70 peer-reviewed papers and received the Investigator Award from EuroPrevent 2013(Rome, Italy), ESC Heart Failure 2016 (Florence, Italy) and 2018 (Vienna, Austria). In regard to social activities, he is a member of the Guidelines Development Committee of Japanese

Physical Therapy Association (2016-present), and serves as a deputy representative of the Japanese Society of Cardiovascular Physical Therapy (2017 - 2019).

For further details of Kamiya's profile, please refer to the following link.

URL : <https://researchmap.jp/kamiken.pt/?lang=english>



A few words regarding World Physiotherapy Congress 2021

Members of ICCrPT attended this year's World Physiotherapy Congress along with 2,100 other delegates from 126 countries around the world. There were many interesting and relevant sessions, which made it difficult, but also fun to choose which to attend. Highlights included sessions on Digital Health Technologies, Expanding the role of physiotherapy in global cardiovascular health, Health Economics, Hospital based physiotherapy, Technology in Physiotherapy Education, Evidenced based diagnosis, and Cancer Rehabilitation: implementing evidence into practice.

It was super to take a virtual tour of all the posters in our own time zone and from the comfort of our own homes. The quality of all the presentations and posters were excellent with 40 physiotherapists from 20 countries/territories receiving awards in recognition of their outstanding poster and platform presentations.

Our ICCrPT group hosted a Networking session which was a great success and was chaired by ICCrPT Executive Committee member Anna Christakou and ICCrPT president Brenda O'Neill. Over 70 participants were able to listen and learn about each other's international practice. In smaller groups we had some great discussions about: 1. what areas of cardiorespiratory practice, teaching or research we would like to see advance over the next two years, and
2. our experience of technology in assessment and management cardiorespiratory.

It was a fantastic congress and participants who registered still have access to most of the on line content until the 8th of July 2021, which is a great advantage. If you wish, you can still register to access this content and receive a 25% discount.

Congratulations to the winners of the WCPT abstracts!

Winner of the ICCrPT best abstract:

World Physiotherapy subgroup outstanding poster presentation award: International Confederation of Cardiorespiratory Physical Therapists (ICCrPT)

Oliveros MJ. IS THE TWO-MINUTE STEP TEST AN ALTERNATIVE OR A COMPLEMENT TO SIX-MINUTE WALK TEST IN TREATED CORONARY PATIENTS?

Country: Chile.

Other award winners with abstracts that featured cardiorespiratory themes included:

World Physiotherapy outstanding poster presentation award: North America Caribbean region

O'Brien KK. CARDIOPULMONARY FITNESS CHANGES ACROSS A THREE-PHASED COMMUNITY-BASED EXERCISE INTERVENTION STUDY WITH ADULTS AGING WITH HIV

Country: Canada.

World Physiotherapy subgroup outstanding poster presentation award: International Organisation of Physical Therapists in Paediatrics (IOPTP)

Iliadis I. CARDIORESPIRATORY FITNESS AND MUSCULAR STRENGTH OF GREEK PRIMARY SCHOOLCHILDREN IN RELATIONSHIP TO OBESITY AND SEDENTARY TIME

Country: Greece.

World Physiotherapy outstanding poster presentation award

Lista-Paz A. WHICH IS THE IDEAL DURATION OF MAXIMAL RESPIRATORY PRESSURE MANOEUVRES TO ACCURATELY MEASURE PIMAX AND PEMAX IN HEALTHY ADULTS?

Country: Spain.

World Physiotherapy outstanding poster presentation award: Europe region

Triteos N. COVID-19 CRITICAL CARE SURVIVORS: A DESCRIPTIVE ANALYSIS FROM A LONDON NHS TEACHING HOSPITAL

Country: United Kingdom.

The next World Physiotherapy Congress2023 is going to be held in Tokyo, Japan, 1-4 June 2023

Brenda O'Neill PhD MCSP President of ICCrPT;

Anna Christakou PT, MSc., PhD, Member of ICCrPT

ICCrPT Research focus

The ICCrPT would like to support research undertaken by our member organisations. For example, we can help you publicize surveys or provide advice.

If you would like to find out more please contact us by email info@cardioresp.physio

Upcoming Congresses

National and International Conferences 2021

SEPTEMBER

31-3 September 40th ISICEM - International Symposium on Intensive Care and Emergency Medicine <https://iii.hm/w2t>

4-8 September European Respiratory Society 31st Annual Congress 2021 <https://erscongress.org/>

11-15 September World Congress of Intensive & Critical Care WCICC 2021
<https://www.worldcriticalcarecongress21.com/welcome>

OCTOBER

2-6 October European Society of Intensive Care Medicine LIVES 34th Annual Congress.
<https://www.esicm.org/events/34rd-annual-congress-copenhagen/>

NOVEMBER

24 – 26 Novemeber British Thoracic Society Winter Meeting.
<https://www.brit-thoracic.org.uk/education-and-events/>

DECEMBER

5-8 December Critical Care Canada Forum
<https://criticalcarecanada.com/>

ICCrPT Member Organisation Focus

***In this edition the ICCrPT focus is on
Cardiorespiratory Physiotherapy Specialty
Group in Taiwan***



Taiwan Physical Therapy Association

The cardiopulmonary specialty group in Taiwan Physical Therapy Association (TPTA) is responsible for the advancement and promotion of cardiopulmonary education, practice and research. The current executive members include physical therapists practicing in the cardiopulmonary specialty in diverse practice settings such as intensive care units, at the bed side, outpatient departments, home care, and faculties in the academic institutes performing research in the field of cardiovascular and pulmonary physical therapy.

Executive members in the cardiopulmonary specialty group meet regularly to discuss the practice, research, and education from different perspectives and experiences. One aim of the discussion is to gather the information so that education in the field of the cardiopulmonary physical therapy could be updated with the advance of medication and research evidence. Another aim of the

discussion is to generate strategies and guidelines for the promotion of professional development in the cardiopulmonary specialty. Currently, we are doing a survey to update the information about the number and the distribution of physical therapists practicing in the cardiopulmonary specialty in Taiwan. We are also setting up regulations for the certification of cardiopulmonary specialist. In terms of professional promotion, in response to the pandemic of the severe COVID-19, the TPTA has collected many practical information and resources about exercise advice for the primary prevention and during the recovery period of COVID-19 for the public and clinical physical therapists. Additionally, “Physiotherapy management for COVID-19 in the acute hospital setting“from WCPT was also translated to Chinese to provide the guide to the clinical physical therapists.

Weblink Taiwan PT Association:

<https://www.tpta.org.tw/EN/>

Email address:

tpta@tpta.org.tw

Why Join the ICCrPT?

What are the benefits of membership of the International Confederation of Cardiorespiratory Physical Therapy (ICCrPT)? This is an official sub-group of the World Confederation of Physical Therapy (WCPT).

WCPT subgroups are independent organisations in their own right. They have a specific area of interest, and promote the advancement of physical therapy in their area of speciality. More importantly, the international sub-group structure allows speciality physiotherapy groups to inform and contribute to the core business of WCPT. Without speciality sub-group representation at an international level, there is a risk that the speciality area interests may not be recognised or promoted. This is particularly true for the smaller sub-group organisations.

There are currently 14 WCPT official subgroups representing the following specialities:

- Acupuncture
- Aquatic
- Cardiorespiratory
- EPAs
- Manual Therapy
- Mental Health
- Neurology
- Occupational health and ergonomics
- Older people
- Oncology, palliative care and HIV
- Paediatrics
- Pelvic and women's health
- Private Practice
- Sports

The ICCrPT recognise that the continuity of the specialty cardiorespiratory sub-group in the short and long term is dependent on the continued support of the cardiorespiratory member organisations and associated members from around the globe who have already joined or are eligible to do so. Inherent in this support is an appreciation of the benefits of membership for the global cardiorespiratory community, and an understanding of how the existence of the ICCrPT will ensure continued Cardiorespiratory Physiotherapy representation at all levels within the World Confederation of Physical Therapy. Specifically this benefit includes, but is not limited to:

1. Ensuring representatives of the *international cardiorespiratory physiotherapy community* are informing and contributing to **key WCPT platforms** including:
 - Policy and Standards
 - Policy Resources
 - Practice Resources
 - Education Resources
 - Global Health Resources
 - World PT Day Resources
 - International Campaigns
 - International Collaborations
 - Executive Management Boards
2. Ensuring that the *international cardiorespiratory physiotherapy community* is informing and contributing to **key international WCPT events** including:
 - Conference Planning Committees
 - International Scientific Committees
 - Abstract selection panels
 - International awards nomination and selection pathways
 - Conference prize nomination and selection pathways
 - The development and delivery of Cardiorespiratory themed focussed symposium
 - The development and delivery of Cardiorespiratory themed pre and post congress courses
 - The inclusion of Cardiorespiratory themed networking sessions
3. Ensuring that the *international cardiorespiratory physiotherapy community* remain informed of, and supported in order to **access WCPT information sharing** including:-
 - Other professional networks
 - Other international speciality networks
 - WCPT information gateways
 - WCPT communication channels
 - The WCPT Experts database (DOVE)
 - WCPT press releases
 - WCPT social media
 - WCPT Toolkits
 - WCPT collated resources
 - Information about commercial partnerships
 - Publicity materials

Topical publications in Cardiorespiratory practice

The ICCrPT Knowledge Translation Committee has chosen to highlight the following 2021 publications relevant to Cardiorespiratory Physical Therapy Practice:

Six-Minute walk distance after critical illness: A systematic review and meta-analysis

This systematic review concluded that there was a significant increase in 6MWD at 12 months compared to 3 months ($P = .017$). In ARDS versus non-ARDS survivors, the mean (95% CI) 6MWD difference over 3-, 6-, and 12-month follow-up was 73 [13-133] meters lower. Female sex and preexisting comorbidity also were significantly associated with lower 6MWD, with ICU-related variables having no consistent associations. Compared to initial assessment at 3 months, significant improvement in 6MWD was reported at 12 months. Female sex, preexisting comorbidity, and ARDS (vs non-ARDS) were associated with lower 6MWT results. Such factors warrant consideration in the design of clinical research studies and in the interpretation of patient status using the 6MWT.

Parry SM. et al. *J Intensive Care Med.* 2021 Mar;36(3):343-351
doi: 10.1177/0885066619885838

Early mobilization in people with acute cardiovascular disease

Early mobilization (EM) is recommended in critical care units. Consecutive admissions to a tertiary-care cardiovascular intensive care unit (CICU) before and after implementation of an EM program were reviewed. There were 1489 patients included in the analysis. In the intervention cohort, one-quarter ($N = 222$; 26.1%) had at least mildly impaired prehospital functional status. The intervention group, compared with the pre-intervention group, was more likely to be discharged home (83.9% vs 78.3%, $P < 0.007$) and had a lower rate of in-hospital death (4.2% vs 6.8%; $P = 0.04$). When adjusted for age, sex, and comorbid illness,

admission Level of Function (LOF) Mobility Scale, was a predictor of discharge to health care facility (odds ratio = 0.72; $P < 0.001$). EM is safe and feasible in the CICU and effective at increasing discharge home.

Semsar-Kazerooni K. et al. *Can J Cardiol.* 2021 Feb;37(2):232-240.
doi: 10.1016/j.cjca.2020.03.038

Current insights into exercise-based cardiac rehabilitation in patients with coronary heart disease and chronic heart failure

This review examined the evidence regarding behaviour change strategies for cardiac patients and provided practitioners with the latest guidance. The 'dose' of exercise training delivered to patients attending exercise-based cardiac rehabilitation is an important consideration because an improvement in peak oxygen uptake requires an adequate physiological stimulus to invoke positive physiological adaptation. The authors concluded by critically reviewing the latest evidence regarding exercise dose for cardiac patients including the role of traditional and more contemporary training interventions including high intensity interval training

Nichols S et al. *Int J Sports Med.* 2021 Jan;42(1):19-26. doi: 10.1055/a-1198-5573

A systematic review and meta-analysis of the effects of cardiac rehabilitation interventions on cognitive impairment following stroke

This review identified evidence for the participation of stroke patients in cardiac/cardiovascular rehabilitation programs internationally, whether or not such programs offer a cognitive intervention as part of treatment, and the impact of rehabilitation on post-stroke cognitive function. Nine studies which delivered cardiac rehabilitation-type interventions to stroke patients were finally included. Only three of these studies delivered cognitive rehabilitation as part of the intervention. Cardiac rehabilitation had no statistically significant effect on cognitive function in five randomized controlled trials (standardized mean difference= 0.28, 95% CI= -

0.16 to 0.73) or in three one group pre-post studies (standardized mean difference= 0.15, 95% CI= -0.03 to 0.33). This review highlights that there are very few studies of delivery of cardiac rehabilitation to stroke patients and that the inclusion of cognitive interventions is even less common, despite the high prevalence of post-stroke cognitive impairment.

Jeffares I et al. Disabil Rehabil. 2021 Mar;43(6):773-788.
doi: 10.1080/09638288.2019.1641850

Exercise-Based cardiac rehabilitation programs in heart failure patients

Exercise training is recommended for patients with heart failure by major societies' guidelines. It improves exercise capacity and quality of life, reduces symptoms of depression, can improve survival, and reduce the risk for hospitalizations. Exercise-based cardiac rehabilitation can be offered with different modalities, such as continuous or interval aerobic training, resistance, and inspiratory muscle training. The intervention must follow an accurate evaluation of the patient's cardiovascular conditions and functional capacity. Despite the multiple benefits of exercise training, there is a lack of adherence to exercise-based programs, due to socioeconomic factors, patients' characteristics, and lack of referral.

Patti A et al. Heart Fail Clin. 2021 Apr;17(2):263-271.
doi: 10.1016/j.hfc.2021.01.007.

Use of supplemental oxygen during exercise testing and training for people with chronic obstructive pulmonary disease: a survey of Australian pulmonary rehabilitation programs

The aims of this study were to determine, in Australian pulmonary rehabilitation programs for people with COPD: (1) whether oxygen saturation (SpO₂) was monitored during exercise testing; (2) whether supplemental oxygen was available during exercise testing and/or training; (3) whether oxygen was prescribed during exercise training; and the reason for providing oxygen; (4) whether a protocol was available for supplemental oxygen prescription during

exercise training. This was a cross-sectional multi-center study using a purposed-designed survey. The survey was sent to 261 pulmonary rehabilitation programs and 142 surveys (54%) were available for analysis. Oxygen saturation was monitored during exercise testing in 92% of programs. Supplemental oxygen was available in the majority of programs during exercise testing (82%) and training (84%). The rationale cited by 87 programs (73%) for prescribing oxygen during exercise training was maintaining SpO₂ above a threshold ranging from SpO₂ 80-88%. Forty-five (32%) programs had a protocol for oxygen prescription during exercise training.

Leung RWM et al. Braz J Phys Ther. 2021 Jan-Feb;25(1):97-102.
doi: 10.1016/j.bjpt.2020.04.003

Supervised pulmonary rehabilitation using minimal or specialist exercise equipment in COPD: a propensity-matched analysis

In patients with COPD, pulmonary rehabilitation (PR) delivered using minimal equipment produces clinically significant benefits in exercise capacity and health-related quality of life that are non-inferior to rehabilitation delivered using specialist equipment. This study provides support for the provision of PR using minimal exercise equipment, particularly in areas where access to specialist exercise equipment is limited.

Patel S, et al. Thorax. 2021 Mar;76(3):264-271.
doi: 10.1136/thoraxjnl-2020-215281.

Incentive spirometry for prevention of postoperative pulmonary complications after thoracic surgery

In this literature review, the authors observed that, although there is no study supporting clinical benefit in the thoracic surgical patient population generally, there is now emerging evidence of benefit in higher-risk patient populations such as those with COPD. There is an indication that incentive spirometry can lead to a reduction in the incidence of postoperative pulmonary complications in these patients. Despite the lack of evidence, there remains an appetite for persevering with incentive spirometry in the postoperative thoracic surgical

patient because it is a relatively inexpensive intervention that motivates many patients to perform regular breathing exercises long after the therapist has moved on to the next patient

*Kotta PA, Ali JM. Respir Care. 2021 Feb;66(2):327-333.
doi: 10.4187/respcare.07972*

An Improvised pulmonary telerehabilitation program for postacute covid-19 patients would be feasible and acceptable in a low-resource setting

Postacute COVID-19 patients are at risk of long-term functional impairment, and the rehabilitation community is calling for action preparing for a "tsunami of rehabilitation needs" in this patient population. In the absence of standard guidelines and local evidence, a 3-wk pulmonary telerehabilitation program was successfully delivered to a postacute severe COVID-19 patient in Malawi. The patient experienced persistent dyspnea and fatigue, with a remarkable impact on his health status. On the final assessment, all his respiratory severity scores had fallen by more than their thresholds for clinical significance. He reported no continued or new complaints, was walking longer distances, had returned to work, and was discharged from follow-up. Our case shows that an improvised pulmonary telerehabilitation program for postacute COVID-19 patients could be feasible and acceptable in a low-resource setting. Benefits include reducing risk of transmission and use of personal protective equipment.

*Bickton FM et al. Am J Phys Med Rehabil. 2021 Mar 1;100(3):209-212.
doi: 10.1097/PHM.0000000000001666*

High-intensity exercise impairs extradiaphragmatic respiratory muscle perfusion in patients with COPD

The study investigated whether high-intensity exercise impairs inspiratory and expiratory muscle perfusion in patients with chronic obstructive pulmonary disease (COPD). The authors assessed the blood flow index (BFI) in three respiratory muscles during hyperpnea and

high-intensity constant-load cycling sustained at comparable levels of work of breathing and respiratory neural drive in patients with COPD. They demonstrated that high-intensity exercise impairs respiratory muscle perfusion, as intercostal, scalene, and abdominal BFI increased during hyperpnea but not during cycling. Insufficient adjustment in respiratory muscle perfusion during exercise was associated with greater dyspnea sensations in patients with COPD.

*Louvaris Z et al. J Appl Physiol (1985). 2021 Feb 1;130(2):325-341.
doi: 10.1152/jappphysiol.00659.2020.*

Exercise Training and Cardiac Rehabilitation in COVID-19 Patients with Cardiovascular Complications: State of Art

Recent scientific literature has investigated the cardiovascular implications of COVID-19. This article aims to collect scientific evidence by exploiting PubMed, Scopus, and Pedro databases to highlight the cardiovascular complications of COVID-19 and to define the physiotherapy treatment recommended for these patients. Exercise training (ET), an important part of cardiac rehabilitation, is a powerful tool in physiotherapy, capable of inducing significant changes in the cardiovascular system and functional in the recovery of endothelial dysfunction and for the containment of thromboembolic complications. In conclusion, due to the wide variety of possible exercise programs that can be obtained by combining intensity, duration, and speed in various ways, and by adjusting the program based on continuous patient monitoring, exercise training is well suited to the treatment of post-COVID patients with an impaired cardiovascular system of various degrees.

Calabrese M. et al. Life (Basel). 2021 Mar 21;11(3):259. doi: 10.3390/life11030259.

Physical Restraints and Post-Traumatic Stress Disorder in Survivors of Critical Illness. A Systematic Review and Meta-analysis

The study investigated the association between physical restraint use and PTSD symptoms in ICU survivors. A systematic review of English language studies was performed and the authors identified 794 articles, of which 37 met inclusion criteria and were included. Physical restraint use may be associated with PTSD in ICU survivors and is associated with delirium and longer duration of mechanical ventilation. Nurse education is likely effective in reducing rates of physical restraint among ICU patients.

*Franks ZM. et al. Ann Am Thorac Soc. 2021 Apr;18(4):689-697.
doi: 10.1513/AnnalsATS.202006-738OC*

Virtual reality and video games in cardiac rehabilitation programs. A systematic review

A systematic review about the information about the application of virtual reality and videogames in cardiac rehabilitation were carried on. The use of virtual reality and videogames could be considered as complementary tools for physical training in patients with cardiovascular diseases. Interactive virtual reality using exergames may promote heart rate, fatigue perception, physical activity and reduce pain in patients with cardiovascular diseases. Virtual reality and videogames enhance motivation and adherence in cardiac rehabilitation programs.

*García-Bravo S. et al. Disabil Rehabil. 2021 Feb;43(4):448-457.
doi: 10.1080/09638288.2019.1631892.*

Muscle power is related to physical function in patients surviving acute respiratory failure: A prospective observational study

The purpose of this study is to assess muscle power in survivors of ARF. Muscle power, strength and physical function were assessed 4-8 weeks post-hospital discharge. Cross sectional area and echogenicity of rectus femoris and tibialis anterior muscles were assessed using ultrasonography. Healthy community-dwelling adults were included for comparison. 12 survivors of ARF participated in this study. Muscle power is significantly reduced in survivors of critical illness and associated with

deficits in physical function. These preliminary findings may support therapeutic interventions aimed at improving muscle power to potentially increase functional benefit.

*Mayer KP. et al. Am J Med Sci. 2021 Mar;361(3):310-318.
doi: 10.1016/j.amjms.2020.09.018*

Current practice and barriers to ICU-acquired weakness assessment: a cross-sectional survey

The purpose of the study was to investigate current practices and barriers to ICU-AW assessment among ICU staff and provide insights to improve ICU-AW assessment in ICUs in China. Qualitative interviews were used to construct a survey questionnaire. This survey was subsequently completed by 3206 ICU staff from 31 provinces, municipalities and autonomous regions in China. In total, 3206 ICU staff responded to the survey (616 doctors (19%), 2371 nurses (74%), 129 respiratory therapists (4%), 51 physiotherapists (2%) and 39 dieticians (1%). Only 27% of the respondents had treated/cared for patients with ICU-AW. Reported methods for ICU-AW assessment were clinical experience (53%), ICU-AW assessment tools (12%), and physiotherapy consultation (35%). Forty-three percent of respondents felt that their ICU-AW-related knowledge did not meet clinical needs, only 10% had received ICU-AW-related training, and 19% proactively assessed whether their patients had ICU-AW. In terms of frequency of assessment, 42%, 16% and 11% of respondents considered that ICU-AW should be assessed daily, every 3 days, and on ICU admission and discharge, respectively. The Medical Research Council scale, electrophysiological assessment and the Manual Muscle Testing scale were considered to be optimal tools for ICU-AW diagnosis by 79%, 70%, and 73% of respondents, respectively. The main reported barriers to ICU-AW assessment were lack of knowledge, cognitive impairment among patients, and lack of ICU-AW assessment guidelines and procedures.

Wu Y. et al. Physiotherapy 2021 doi: 10.1016/j.physio.2021.01.002

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