

## Impact of a return-to-work programme with occupational therapists as coordinators in a public hospital: A 3-year evaluation

Presenter: Joanna Yu Ting Giam, Tan Tock Seng Hospital  
Joanna.YT.Giam@nhghealth.com.sg

Co-investigators:

Sanchalika Acharyya, Tan Tock Seng Hospital  
Heidi Siew Khoon Tan, Tan Tock Seng Hospital

Singapore

## A randomized controlled trial of a Return-to-Work Coordinator model of care in a general hospital to facilitate return to work of injured workers

Heidi Siew Khoon Tan<sup>a,\*</sup>, Doreen Sai Ching Yeo<sup>b</sup>, Joanna Yu Ting Giam<sup>a</sup>, Florence Wai Fong Cheong<sup>a</sup> and Kay Fei Chan<sup>b</sup>

<sup>a</sup>Department of Occupational Therapy, Tan Tock Seng Hospital, Singapore

<sup>b</sup>Tan Tock Seng Rehabilitation Centre, Tan Tock Seng Hospital, Singapore

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### Abstract.

**BACKGROUND:** Return-to-work (RTW) programmes for injured workers have been prevalent in Western countries with established work injury management policies for decades. In recent years, more Asian countries have started to develop RTW programmes in the absence of work injury management policies. However, few studies have evaluated the effectiveness of RTW programmes in Asia.

**OBJECTIVE:** Return-to-work coordination has been found to be an important facilitator in RTW programmes. This study seeks to determine the effectiveness of a Return-to-work coordinator (RTWC) model of care in facilitating early RTW for injured workers in Singapore.

**METHODS:** A randomized controlled trial was used. 160 injured workers in a general hospital were randomly allocated to either control (receive usual hospital standard care) or intervention (assigned a RTWC) group. The RTWC closely supported

### Key findings

- Local injured workers
- Time taken for RTW for injured workers with RTWC 37.8 days
- RTWC is associated with earlier RTW by 10 days
- There were no differences in RTW rate at 3 and 9 months and no impact in quality of life between intervention and control groups

Source: TTSH Occupational Therapy Website

# Background

1 November 2017

Singapore

## Programme launched to help injured workers return to work



Source: WSH Council Website

*Includes all workers covered under Work Injury Compensation Act (WICA)\**

*\*WICA provides workers with a low cost and faster claims process to claim for compensation after a work injury up to 1 year or S\$45K (before 1 Nov 2025).*

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# The RTW Programme

RTW Coordinator (RTWC) acts as the central person to coordinate inputs from various stakeholders to facilitate the worker to RTW.



RTWCs in TTSH are Occupational Therapists who are trained and have undergone specialised training in conducting Functional Capacity Evaluations and occupational assessments

# Aim of study

This study aims to evaluate the effectiveness of a RTW rehabilitation programme and identify factors associated with successful RTW outcomes over 3 years in a public hospital in Singapore.



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# Methodology

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- A retrospective quasi-experimental study evaluated 196 injured workers (between 2017-2019 and 2021-2022) who consented to the RTW programme in TTSH.

Inclusion criteria:

- a) Worker is covered under Work Injury Compensation Act (WICA)
  - b) Worker is unlikely, or has not returned, to work for more than 14 calendar days as a result of the work-related injury
  - c) Worker is a Singaporean, Permanent Resident or Work Permit Holder with a validity of at least 9 months or have good potential of returning to pre-injury job with the same employer in 3 to 6 months' time
- Each participant was assigned to an Occupational Therapist as their RTWC.

# Methodology

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- Outcome measures included
  - time taken to first RTW
  - RTW category (using RTW hierarchy)
  - pain scores (using numeric rating scale)
  - self-perceived work ability (using work ability index)
  - self-perceived overall health status (using EQ 5D/5L)
- Comparisons were made between those who returned to work and those who did not at discharge.

# Results

Demographics (N=162)	
<b>Gender</b>	
Male	134 (82.7%)
Female	28 (17.3%)
<b>Nationality</b>	
Foreigner	87 (53.7%)
Singaporean	75 (46.3%)
<b>Age in years</b>	
Mean (SD)	44.6 (13.8)
Median [Min - Max]	44 [19 - 78]
<b>Occupation</b>	
Cleaners and Labourers	74 (45.7%)
Technician	34 (21.0%)
Professionals	14 (8.6%)
Craftsmen and Related Trades Workers, Plant and Machine Operators and Assemblers	11 (6.8%)
Service and Sales Workers	8 (4.9%)
Senior Officials and Managers	2 (1.2%)
Workers not Elsewhere Classified	19 (11.8%)

Almost 60% of participants sustained fractures/dislocation/ crush injuries

Injury Types	n (%)
Fracture/Dislocation(crush)	97 (59.9%)
Open wounds/Avulsion/Degloving/Laceration injuries	19 (11.7%)
Amputation	12 (7.4%)
Ligament/Meniscal/tendon injuries	7 (4.3%)
Others	5 (3.1%)
Repetitive Strain Injuries/Tenosynovitis, soft tissue (e.g. TFCC, rotator cuff tears)	5 (3.1%)
Nerve injuries	5 (3.1%)
Sprains/Strains	4 (2.5%)
Back sprain and radiculopathies	3 (1.9%)
Contusion	3 (1.9%)
Intracranial bleed (Extradural, Subdural haemorrhage)	2 (1.2%)

# Results

- The median time taken to first RTW was **85 days**.
- At discharge, **88.3% (n=143) returned to work**, with **84% returning to the same employer** and about **60% returning to the same job**
- Significant improvements were observed in pain scores, work ability and self-perceived health status from baseline to discharge.

Outcome	Time point	Mean	SD	Mean difference	Lower CI	Upper CI	p-value
Pain score at rest	Baseline	1.742	2.21	1.34	0.886	1.79	< .001
	Discharge	0.403	1.22				
Pain score at activity	Baseline	4.258	2.73	1.61	1.013	2.2	< .001
	Discharge	2.649	2.27				
EQ-5D/5L Health Score Rating	Baseline	66.5	18.09	-10.5	-14.74	-6.26	< .001
	Discharge	77	16.46				
Work Ability Index	Baseline	5.081	2.71	-2.51	-3.003	-2.01	< .001
	Discharge	7.589	1.56				

# Results

- Those who returned to work had lower baseline pain scores and higher baseline work ability and health status ratings compared to those unable to RTW.

Baseline scores	Group	N	Mean	SD	Mean Difference	Lower CI	Upper CI	p - value
Pain score at rest	Returned to work	143	1.41	2.03	-1.437	-2.437	-0.436	0.005
	Unable to RTW	19	2.84	2.41				
Pain score at activity	Returned to work	143	4.22	2.71	-0.994	-2.312	0.324	0.138
	Unable to RTW	19	5.21	2.88				
EQ-5D/5L Health Score Rating	Returned to work	143	67.36	17.77	9.023	0.251	17.796	0.044
	Unable to RTW	18	58.33	17.66				
Work Ability Index	Returned to work	143	5.27	2.61	1.634	0.38	2.888	0.011
	Unable to RTW	19	3.63	2.5				

# Discussion

## Effectiveness of hospital-based RTW programme

Outcomes	Current study	Chen et al (2023)	Tan et al (2016)	Tamminga et al (2013)
Clientele	Injured workers (n=162)	Injured workers (n=226)	Injured workers (locals only) (n=153)	Female cancer patients (n=133)
Median time taken to RTW	85 days	81.5 days	36 days	194 days
RTW rate	88.3%	84%	78% (9 months)	86%
Proportion of participants given Light duties	59.8%	41.6%	54%	
Work ability index	Improved (5.08 → 7.59)	Improved (6 → 9)		Improved (5 → 7)
Quality of life score	EQ 5D/5L overall score: 66.5 → 77.0		Improved SF-36 scores at 9 months	Improved SF-36 scores

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# Implications for Occupational Therapists

- 1) **OTs should start RTW conversations early. Consider working with their organisations to position the start of their RTW facilitation role**
  - **Early intervention** is associated with successful RTW.
  - For instance, **OTs who work in acute hospitals can start facilitating RTW** for injured workers as their first point of contact when they seek medical treatment after an injury.
- 2) **OTs should encourage positive health beliefs and reduce fear of physical activity** to improve injured workers' self-perception of their work ability.
  - Numerous studies have found that better self-perception on work ability is associated with successful or earlier RTW (Chen et al., 2023; Tan et al., 2023; Zhang, et al., 2022; Rashid et al., 2021)
  - **Avoid catastrophising terms** such as “very serious injury”, “won’t be back to normal” as these can worsen negative illness perception. (See et al., 2017)
  - Beyond limitations due to a “*broken human body which needs to be fixed*”, **focus on ability** during their recovery period. (See et al., 2017)
  - Explore **RTW as a possible rehabilitation goal** to encourage our clients during their rehabilitation period

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# Thank You

Tan Tock Seng Hospital • Khoo Teck Puat Hospital • Woodlands Hospital • Yishun Community Hospital • TTSH Integrated Care Hub  
Institute of Mental Health • National Skin Centre • National Centre for Infectious Diseases • NHG Cancer Institute • NHG Eye Institute • NHG Heart Institute  
Population Health • NHG Polyclinics • Diagnostics • Pharmacy • Community Care • NHG College • Centre for Healthcare Innovation