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Short Communication

A hospital-based return-to-work programme in Singapore

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Abstract: Return to Work (RTW) programmes have become imperative in manpower scarce countries. This paper describes a RTW programme in a Singapore tertiary hospital, reports patient outcomes and discusses the practicality and effectiveness of the programme. Seventy-three workers participated in the programme over a two-year period. A statistically significant increase in work ability and self-perceived overall health status from first contact with worker (baseline) to discharge was observed. Continued programme participation till first RTW was associated with higher work ability and self-perceived overall health status at baseline. The RTW Coordinator-anchored multi-disciplinary model which provided holistic support to the worker and addressed stakeholder interests were central to the programme's success. Greater awareness of RTW programme benefits will improve sustained participation. Our RTW programme features, implementation experiences and participant reported effectiveness may inform the development of improved return to work models.

Key words: Coordination, Health performance indicators, Injury, Occupational fitness, Occupational health, Occupational rehabilitation, Performance

Return to work (RTW) programmes are aimed at facilitating the injured, temporarily impaired, or disabled worker to return to work as soon as it is medically safe. These programmes are relevant for work-related injuries or diseases, as well as those that are not occupationally linked. Successful RTW programmes have been shown to reduce incurred costs by 60% and indemnity claims by 19%[1)]. A 10 yr study of a RTW programme at the Johns Hopkins Hospital in the United States found a decrease in lost workdays from an average of 26.3 per 100 employees to 12 per 100 employees[2)].

In 2017, the Singapore Workplace Safety and Health Council (WSHC) launched a National RTW Programme. The Ministry of Manpower (MOM) partnered public hospitals to roll out programme initiatives including stakeholder education and competency building, grants to support injured workers and employers, and establishing RTW services in public hospitals.

A study was conducted to examine the feasibility and effectiveness of a Return to Work Coordinator (RTWC) led programme at a general hospital and reported promising results[3)]. Subsequently, it was rolled out to other hospitals

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in Singapore. In this paper we report the real-world translation of a multi-disciplinary RTW programme at another autonomous public health institution in Singapore. We describe the design and implementation, report programme outcomes and discuss its practicality and effectiveness in a patient population which include those requiring an extended period of rehabilitation. We also compared our programme with alternative models adopted internationally.

The aim of the programme was to provide early intervention to support workers in their recovery after injury and facilitate the transition from hospital back to the workplace. Key features of the programme included a) multidisciplinary approach, b) care coordination and case management by a RTWC, c) worker support based on the biopsychosocial framework, d) understanding and addressing stakeholder interests and e) identification of injured workers who would benefit from the enrolment in the RTW programme.

We adopted a multidisciplinary approach which ensured best clinical care and enhanced chances of an early, successful, and sustained RTW. At the core of our multidisciplinary team was a Return-to-Work Coordinator (RTWC) who provided necessary support to the worker and was the single point of contact for all RTW stakeholders. Rehabilitation sessions were conducted by physiotherapists and occupational therapists. Active inputs were given by the rehabilitation and occupational medicine physician in pain management, therapeutic exercise, ergonomics, worker health, prevention of injury aggravation and workplace interventions and modifications. On a case-by-case basis, doctors from other clinical specialties contributed to clinical management and RTW efforts.

RTWCs were select physiotherapists and occupational therapists working within the hospital who had the prerequisite competencies of good communication skills, ability to safeguard confidentiality, demonstrate empathy and establish trust[4]. Their pre-existing knowledge in rehabilitation was enhanced by formal RTW coordination training. They bridged communication between hospital personnel and other stakeholders in the RTW ecosystem (Fig. 1) and enabled the integration of support services within the community and the employer. They led the formulation of a phased RTW plan based on realistic goals of recovery and recommended RTW interventions such as work accommodation, modifications of work tasks, changes to working hours and work duration.

The biopsychosocial framework was applied to comprehensively identify individual and workplace barriers to recovery and direct targeted efforts towards specific risks which may impede the RTW process. At first consult, the RTWC identified the worker's primary concerns arising from his disease state. These extended beyond biological considerations to include psychosocial stressors. Where necessary, the RTWC would refer the worker to a medical social worker, a mental health expert or seek community support. Workplace barriers such as unsupportive supervi-

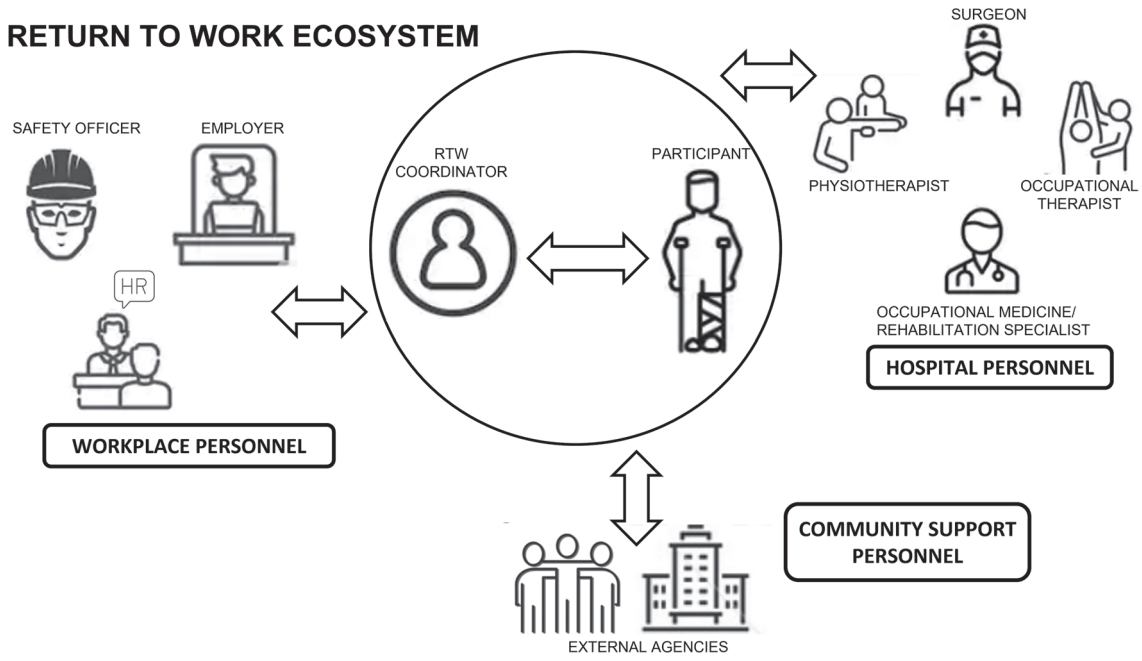

Fig. 1. Return to work ecosystem.

sors were overcome through education. For example, where supervisors highlighted that workplace modifications were expensive and unnecessary, they were challenged to consider the reduction in operation disruptions and productivity gains of an earlier RTW.

As RTW outcomes are better achieved by deeper consideration of stakeholders' motivations, interests and concerns[5], RTWCs were proactive in involving employers' early in the RTW journey. Employers were routinely updated on RTW progress, their doubts were quickly clarified, and assistance was provided on matters relating to work injury compensation or RTW grant claims.

It was realised that workers who required and attended therapy sessions as part of their recovery were more receptive to the programme and better motivated to RTW. The therapists were made aware of the RTW plan and scoped treatment to meet RTW goals. With clear goals, workers were more motivated at therapy sessions. For convenience, RTW sessions were scheduled to coincide with visits for therapy sessions.

Programme activities were conducted in the rehabilitation phase and took reference from the Singapore Workplace Safety and Health Council[6]. Upon enrolment, a worker was assigned a RTWC who supported him throughout the RTW journey. At first contact, the RTWC sought to understand the worker's pre-incident job scope and duties. Relevant functional and psychosocial assessments were conducted. Early contact was made with the worker's employer and all relevant stakeholders within the RTW ecosystem. The RTWC attended outpatient clinical appointments and therapy sessions with the worker where RTW goals and plans were formulated. RTW plans were discussed with employers and other stakeholders. Where required, workplace visits were conducted to better understand the work tasks and the environment, and recommendations were made for job accommodations. After RTW, the RTWC continued close communication with the worker and employer to resolve any RTW related issues. The worker was discharged from the programme when assessed to have RTW successfully.

Workers with traumatic work-related musculoskeletal disorders, burns and joint pains who were not likely or had not returned to work for 14 calendar days, and who could potentially benefit from the programme were recruited. Enrolment was conducted from both the inpatient and outpatient settings. Worker's consent and employer's support were sought before enrolment.

From January 2018 to December 2020, 73 workers were recruited into the programme. Demographics, circumstances surrounding the accident or injury and relevant medical information were collected at first contact (baseline). Health-related outcomes were collected at baseline, first RTW and at discharge from the programme. Self-perceived overall health status was measured using the EQ-VAS[7]. RTW self-efficacy was determined using the overall score from the RTW Self-Efficacy Scale[8]. Work Ability was compared to lifetime best and physical demand at work rated across 5 categories from "sedentary" to "very heavy". Work-related outcomes included time in RTW programme, time to first RTW and total medical leave. Changes in health-related outcomes from baseline to first RTW and discharge were analysed using Kruskal–Wallis tests with post-hoc Mann–Whitney U tests. Statistical analysis was performed using SPSS (Singapore).

Ethics approval from the SingHealth Centralised Institutional Review Board was obtained in accordance with the institution's research policies and regulations.

Most of the 73 workers suffered either burns (n=30; 41%), traumatic injuries (n=25; 34%) or joint pains (n=12; 16%). About half of them were locals while the other half were migrant workers. Most were younger workers (19 to 49 age group: n=54; 74%). The common industries were hospitality (n=26; 36%) and construction (n=11; 15%). Of the 73 workers enrolled in the programme, 38 remained in the programme at first RTW, and 32 completed the programme and was discharged (the remainder were not yet discharged at the time of data analysis).

In terms of health-related outcomes, there was a statistically significant increase in work ability from baseline to first RTW (U=854, p=0.014), and again from first RTW to discharge (U=350, p=0.003) (Fig. 2a). A statistically significant increase in self-perceived overall health status was also observed from first RTW to discharge (U=290, p=0.001) (Fig. 2b). There was also a trend of a decrease in pain score and an increase in self-efficacy, although they did not reach statistical significance (Fig. 2c and 2d). There was no significant change in physical demand at work (median 'medium' rating across baseline, 1st RTW and discharge).

In terms of work-related outcomes, workers typically spent close to three months in the RTW programme (median 81.5 d, IQR 51.25 to 135.75 d), and required about two months before first RTW (median 64 d, IQR 44.5 to 97.5 d). Workers also typically required more than two months of medical leave (MC) for recovery (median 71 d, IQR 42 to 100.5 d). It was noted that the burns and trauma victims tended to require longer periods of recovery before RTW.

Continued programme participation till first RTW was

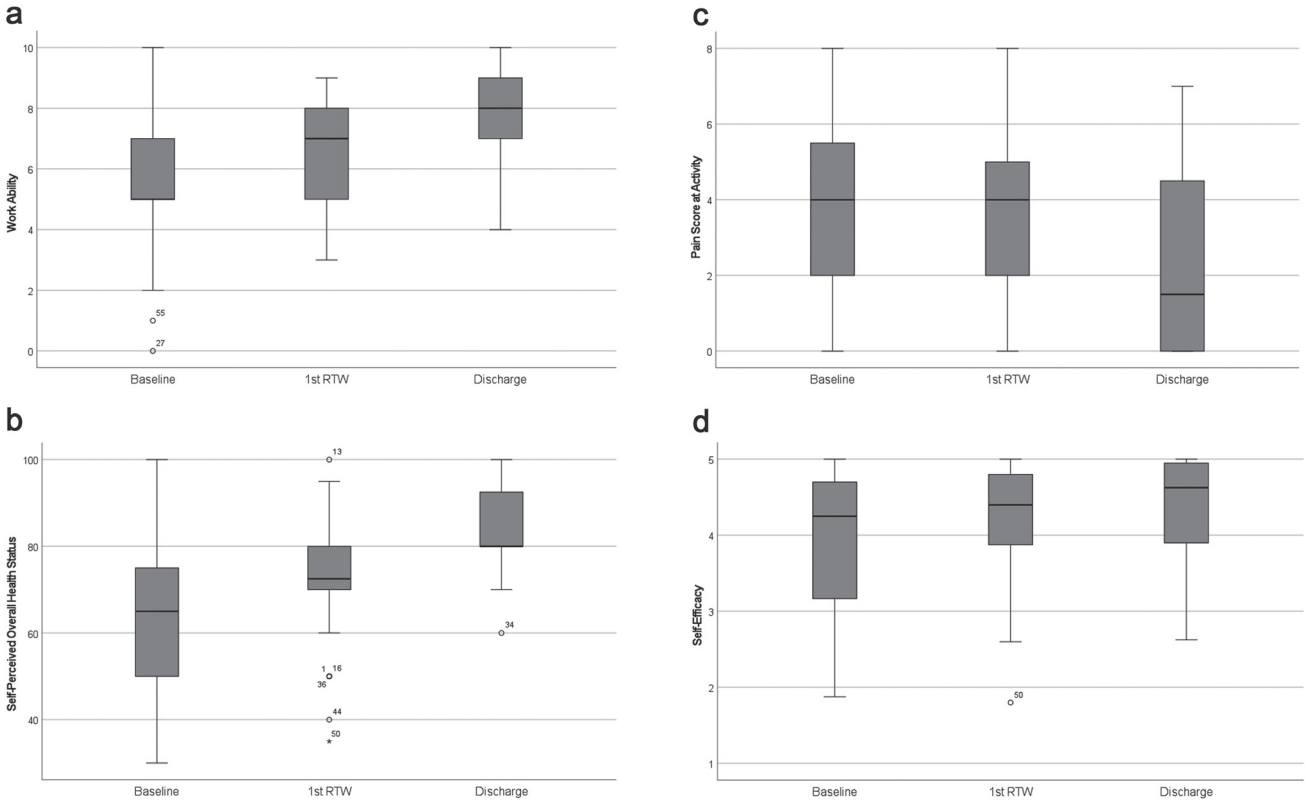

Fig. 2. a. Changes in health-related outcomes over the RTW programme, from baseline to first RTW to discharge—work ability. b. Changes in health-related outcomes over the RTW programme, from baseline to first RTW to discharge—self-perceived overall health status. c. Changes in health-related outcomes over the RTW programme, from baseline to first RTW to discharge—pain score at activity. d. Changes in health-related outcomes over the RTW programme, from baseline to first RTW to discharge—self-efficacy. RTW: return to work.

observed to be associated with baseline work ability and baseline self-perceived overall health status. Compared to workers who dropped out of the programme, workers who stayed in the programme had higher work ability and higher self-perceived overall health status at baseline (Fig. 3).

Consistent with other studies, multidisciplinary vocational rehabilitation improved work ability, perceived health, pain and RTW[9–11]. Studies have also shown that higher baseline work ability and self-perceived overall health status are positive predictors for RTW[12, 13] and could explain motivation to continuously engage in RTW support services and hence retention in the programme. This may explain our findings that workers who stayed in the programme have higher work ability and self-perceived health status at baseline.

The challenges we faced in the implementation of our programme are worthy of discussion for critical appraisal and may serve as the basis for improved models. RTWCs noted a lack of appreciation of the utility of a RTW programme amongst workers, employers and even healthcare professionals. Key reasons could include insufficient knowledge of the injury, residual disability and its implications on work, as well as the benefits of a RTW programme[14]. For healthcare professionals, RTW is not well covered in medical, nursing, and allied health curricula. This could affect referral into the programme, enrolment, and completion rate. Challenges with sustained participation in RTW programmes may ease when tangible benefits from such programmes are realised. A proportion of workers were uncomfortable that a third party (RTWC) would be in communication with their employers regarding their medical condition and recovery progress. They cited confidentiality concerns and loss of decision-making autonomy in RTW. Employers were hesitant to invest resources and dedicate additional personnel to facilitate the worker's RTW due to cost concerns. Although reassured that costs would be covered under the Work Injury Compensation Act and the new grant from the government, they were concerned that additional claims would contribute to increased insurance premiums. RTWCs had apportioned time from their primary roles to perform

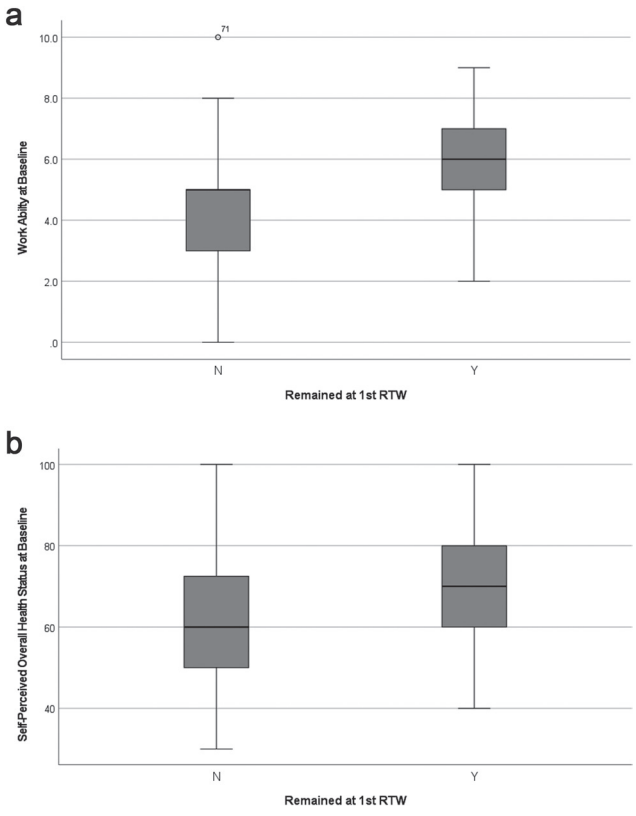

Fig. 3. a. Comparison of baseline factors between participants who remained in the program at first RTW and participants who had dropped out—baseline work ability. Remained in the program, median=6, IQR=2.0. Dropped out, median=5, IQR=2.0. U=326, *p*=0.016. b. Comparison of baseline factors between participants who remained in the program at first RTW and participants who had dropped out—baseline self-perceived overall health status. Remained in the program, median=70, IQR=20. Dropped out, median=60, IQR=22.5. U=341, *p*=0.038. RTW: return to work; IQR: interquartile range.

tasks relating to the programme. This was reported to be a constraint as they had to balance competing demands from their core duties. A circumventing measure was the conduct of tele-consultations when face to face meetings could not be arranged.

It is also useful to consider alternative models of RTW and if they may be applicable locally. McLaren *et al.* examined the effectiveness of self-insured employer-based RTW programmes. The study reported a 42% reduction in the median number of weeks from time of injury to return to work[15]. The significant reduction was driven by the most severely injured workers who showed the greatest reduction in time to return to work. Workers' compensation policy is a key determinant in employers' commitment to RTW programmes. In the self-insurance model, employers bear the full cost of their workers' compensation claims and are hence more likely to adopt a RTW programme as their incentives are based entirely on workers' compensation liability concerns and minimising workers' compensation payments[15]. This is in comparison to the private insurance model (which Singapore adopts), where firms pay a premium based on their expected workers' compensation liability. As such, wholesale adoption of an employer-based return to work model may not be practical in our local context. Careful consideration of incentives such as lower insurance premiums for successful reduction in work injury related absences or even a regulatory framework governing employers' and workers' return to work obligations will be required before the introduction of prudent and phased changes. Till then, hospitals in Singapore should continue to run, improve, and possibly extend RTW programmes into the community for patients who require longer term rehabilitation.

The hospital-based RTW programme enabled the coordination of multi-disciplinary care to facilitate early and safe return to work. The programme was effective in promoting an increase in self-perceived health and work ability across the duration of the programme. The programme's best practices serve as reference for other hospital RTW programmes. Cross sharing of programme experiences will be beneficial in fine-tuning the hospital-based model and set the stage for the development of improved RTW models.

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