



Predictors of non-return to work 2 years post-injury in road traffic crash survivors: Results from the UQ SuPPORT study



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ABSTRACT

Purpose: Individuals who have sustained an injury from a road traffic crash (RTC) are at increased risk for long lasting health problems and non-return to work (NRTW). Determining the predictors of NRTW is necessary to develop screening tools to identify at-risk individuals and to provide early targeted intervention for successful return to work (RTW). The aim of this study was to identify factors that can predict which individuals will not RTW following minor or moderate injuries sustained from a RTC.

Method: Participants were 194 claimants (63.4% female) within a common-law “fault-based” system from the UQ SuPPORT cohort who were working prior to their RTC. Participants were assessed at 6 months on a variety of physical and mental health measures and RTW status was determined at 2 years post-RTC. RTW rate was 78.4%.

Results: Univariate predictors of NRTW included being the driver or passenger, having a prior psychiatric diagnosis, high disability level, low mental or physical quality of life, predicted non-recovery, high pain, low function, high expectations of pain persistency, low expectations about RTW, having a psychiatric diagnosis, elevated depression or anxiety. The final multivariable logistic regression model included only two variables: disability level and expectations about RTW. Seventy-five percent of individuals who will not RTW by 2 years can be identified accurately at an early stage, using only these two predictors.

Conclusion: The results are promising, because they suggest that having information about two factors, which are easily obtainable, can predict with accuracy those who will require additional support to facilitate RTW.

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Introduction

The annual cost of road traffic crashes (RTCs) in Australia is estimated at \$27 billion [1] and Australia reports spending 3.6% of its gross domestic product on RTCs [2]. The World Health Organization [3] anticipates that RTC injuries will be the third leading cause of disability-adjusted life years lost (DALYs) by 2020. One of the major factors contributing to these costs is non-return to work (NRTW) following injury. NRTW is also problematic because working is associated with better health, self-esteem and social connectedness [4,5], as well as improved quality of life and overall longevity [6].

Previous research on return to work (RTW) rates and predictors in RTC cohorts have produced varied results, most likely due to the differences in the nature of injuries in the samples assessed, the variance in severity of injury (mild through to catastrophic), the timeframe for follow-up, the compensation scheme and other sociocultural factors that vary across countries, such as the health care system. Rates of RTW range from 42% to 69% at 9 to 12 months post-RTC for more serious injuries [7–10] and from 83% to 100% at 8 to 12 months post-RTC for less serious injuries [10–13]. The majority of individuals with minor injuries will RTW within 12 months, however there is a substantial minority who will experience delayed or NRTW. Although the RTW rate may seem acceptable for those who experience less serious injuries, of the four studies examining this population [10–13], only one study found a 100% RTW rate, while the others report a 10–17% NRTW rate. Given that those suffering minor or moderate (as opposed to serious/severe) injuries are the largest group of RTC survivors, this group warrants further research. For example, in Queensland, 87%

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of RTC survivors (i.e., 42,721 individuals) finalised a claim relating to minor or moderate injuries during 2005–2014 [14]. This represents a substantial proportion of individuals who will potentially not RTW, if the NRTW rate is estimated to be around 10%.

Predictors of NRTW 9–12 months after serious RTC injury include longer hospital stay [7], injury type [9], greater injury severity [10,15], being discharged to rehabilitation versus home [7], intending to or pressing charges [15], having an occupation with less independence [7], having PTSD [16] and greater pain and physical sequelae at 6 months post-RTC [15]. Predictors of NRTW 8–24 months after minor/moderate RTC injury include manual labour occupation [13], greater injury severity [13], injury type [13] and greater pain severity [17]. The only reasonably consistent predictor of NRTW to date in RTC cohorts is greater injury severity [10,13,15].

Due to the small number of studies and predictors assessed, it is premature to form any strong conclusions regarding predictors of RTW in the RTC population. Most research regarding RTW following RTC has focused on cohorts with serious injuries, several studies only report rates of RTW and do not investigate predictors of RTW, and those that examine predictors of RTW tend to include a limited range of predictors, with little consistency in the predictors assessed across studies. It is possible that predictors of RTW in RTC cohorts differ according to the severity and nature of the injuries sustained. However, there is not enough evidence to allow comparison of RTW rates and predictors in minor/moderate versus serious/critical RTC injuries. More research is needed to inform our understanding of the factors that predict NRTW in minor and moderate injury groups following RTC.

To inform the present study, we examined published findings on a broader range of injury survivors to investigate the factors which predict failure to RTW. Studies were selected based on having clearly specified variables which were assessed at baseline and used to predict NRTW outcomes at a subsequent time point in a general injury population (as opposed to a specialised service such as a pain clinic). The participant cohort includes general trauma, work-related injuries, brain injury, and musculoskeletal disorders. Both hospitalised and non-hospitalised injuries are included, with follow-ups ranging from 3- to 24-months post-injury. RTW rates following the various forms of injury ranged from 43 to 97%. The most consistent predictor of RTW in broader injury samples was positive expectations at baseline regarding RTW in the future [18–26]. Other predictors of NRTW in broader injury samples included older age [18,19,27–31] (but see [32,33] for conflicting results), lower levels of education [29,34–37], increased injury severity [27,30,34,38,39] (but see [40,41] for conflicting results), type of injury [28,30,35,37], returning to physical work tasks [28,34,40,42], perceiving accident severity as severe [38,40,42], higher baseline pain levels [18,27,30,37,39,43], baseline mental health symptoms [27,39], baseline posttraumatic stress [37,39,44], baseline anxiety [35,44] and baseline depression [44,45] (but see [41] where baseline anxiety and depression do not predict RTW).

Determining the predictors of NRTW for RTC survivors is necessary to develop screening tools to identify at-risk individuals and to provide early targeted intervention for successful RTW. Previous research has focused predominantly on hospitalised patients. However, recent evidence suggests that even when the injuries sustained from RTC are minor, these injuries can lead to long lasting health problems e.g. [12,46–48].

This study aims to identify factors that can predict which individuals will not RTW in RTC survivors with minor and moderate injuries. There is a paucity of research on individuals who have sustained minor or moderate injuries, only a limited range of risk factors have been assessed and follow-up periods

have typically been 12 months or less. The current prospective study assesses RTW at 2 years post-RTC, including a large variety of predictors: demographics, road user type, physical and functional health, disability, pain, posttraumatic stress, depression, anxiety, social support and expectations about recovery and RTW, using a wide variety of measures.

Method

Participants

This analysis forms part of The University of Queensland Study of Physical and Psychological Outcomes for claimants with predominantly minor injuries following a Road Traffic crash (UQ SuPPORT) [49]. Participants were RTC survivors recruited from the Motor Accident Insurance Commission (MAIC) database between April 2009 and September 2010. All participants were claimants within a common-law “fault-based” compulsory third party (CTP) motor vehicle insurance scheme in the State of Queensland. There are over four million insured vehicles in Queensland [14] and MAIC regulates and monitors the CTP scheme for all insured vehicles in the State. This scheme provides injured persons (whether they are drivers, passengers, pedestrians or cyclists) with an insurance policy that covers their unlimited liability for personal injury caused by the insured motor vehicle. Being a fault-based scheme, the injured party must establish negligence against the owner/driver of the insured motor vehicle, and can seek monetary compensation in a court of law from the person established as being at fault for their injury/losses. If the injured person was completely at fault in the accident, then the individual cannot obtain compensation. Eligible participants received a letter of invitation to participate in the study from MAIC. The consent process was opt-in, such that participants needed to return their completed consent form via post to MAIC, to be included in the study. Once the participant had consented, all study data was collected by the research team and MAIC had no further involvement in the study.

A total of 3146 eligible individuals were invited to participate in the study: 382 consented to participate, however 10 dropped out before the first wave. Thus, 372 participants were included in the study sample at Wave 1 (see Fig. 1), and 242 (65.1%) provided

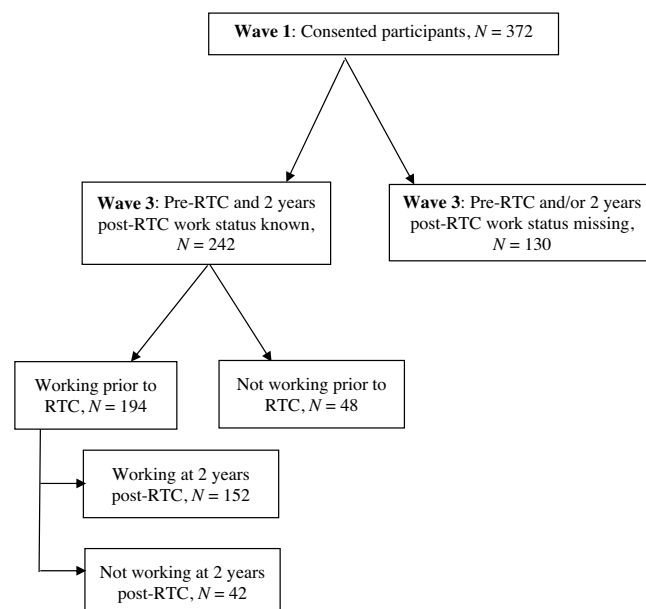


Fig. 1. Flow chart of study participants.

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