# Post-Crash Neglect: Social Support as a Determinant of Recovery and Satisfaction Among RTI Victims in Pakistan

**Waqas**
*Data Analyst, The University of Agriculture, Peshawar*
waqass@aup.edu.pk

**Shahid Khan**
*Assistant Professor Sociology KUST, Kohat*
dr.shahidkhan@kust.edu.pk

**Abstract**
*The current study examines the association between Problems in Accessing Social Support (PASS) and Health Satisfaction Status (HSS) in road traffic injuries (RTIs) victims in District Malakand of Khyber Pakhtunkhwa, Pakistan. A 7-item PASS scale was used to collect data. Both bivariate and multivariate analyses revealed a significant and consistently negative relationship between limited social support and low health satisfaction. Age-group between 31-60 years of male dominant with having secondary education faced more adverse effect because of lack of social support. In addition, income as background variable did not significantly alter the strength of this association, highlighting the universal impact of social support on recovery outcomes. The findings of the study accentuate the critical role of accessible social support from social network in improving post-injury health satisfaction, highlighting the need for targeted social and policy interventions to enhance recovery and well-being.*

**Keywords:** *Problems in Accessing Social Support, Health Satisfaction Status (HSS), Road Traffic Injuries*

## Introduction

RTIs one of the leading and rising public health concern worldwide. This serious concern is increasing in low- and middle-income countries like Pakistan. The improper road infrastructure, lack of traffic laws enforcement, and meager medical facilities are the main cause of RTIs (WHO, 2018). As far as the physical and economic burden of RTIs are concerned, the victims also face a serious damaging consensus in the shape of less social support. In case of post-crash where serious health and financial issues aroused at once and the victims become completely dependent on family and friends. The dependency is not confined to the aforementioned social network only but grasped by the community members in the shape of emotional and caregiving support. The kind of support the victims require is extremely limited in many households, particularly with strained resources. Sometime such support is completely absent. When the victim faced such negligence from family and friends, the recovery prolonged to an uncertain period and ultimately went into a state of psychological distress. Hence, the overall health satisfaction is lowering (Prang, Newnam, & Berecki-Gisolf, 2015; Yohannes, Gelaye, & Williams, 2018).

Prang et al., (2015) & Chan & Chan, (2007) series of research studies accentuate that strong social support expedites the recovery period as well as the quality of life. In contrast, some other studies

worked on the absence of social support and found that irrespective of deterioration of recovery period and quality of life the victim become prey of PTSD and associated long term health problems (Pelmera-Suárez et al., 2016; Yohannes et al., 2018)

**Justification of the Study**

In Pakistan, the RTIs have been empirically investigated by many researchers in terms of socioeconomics repercussion but studies on social support after post-injury recovery remain limited almost non-existent. This study aims to fill that gap by examining how the presence or absence of meaningful social support affects the physical, emotional, and social outcomes of RTI victims. Drawing on fieldwork conducted in District Malakand, this paper investigates both the detrimental impact of neglect and the positive influence of supportive networks on health satisfaction and rehabilitation experiences. The findings highlight the urgent need for more family- and community-based interventions that recognize social support as a critical component of post-crash care.

**Objectives of the study**

This study seeks to achieve three key objectives

- **To** assess the extent to which road traffic injury victims in the District of Malakand receive social support from family and community members.
- **To** analyze the effects of lacking such support on victims' physical recovery, psychological well-being, and overall health satisfaction.
- **To** compare outcomes between victims who received adequate social support and those who experienced neglect.

## METHODOLOGY

**Research Design**

A cross-sectional research design was adopted for this study to examine the variables of interest at a single point in time. The main purpose of this study is to assess the status, attitudes, or characteristics of a specific population without manipulating the environment or introducing time-based changes. In this study, the data was collected from a sample population at one specific moment, aiming to assess the degree to which RTI victims receive support from family and community members.

**Study Universe**

The study was conducted in District Malakand, located in the northwest region of Pakistan, formerly known as the Northwest Frontier Province and now called Khyber Pakhtunkhwa. According to the 7th Population and Housing Census by the Pakistan Bureau of Statistics, Malakand has a population of 826,250. Administratively, there are two tehsils, Sama Ranizai and Swat Ranizai, comprising 28 Union Councils (UCs), 15 Neighborhood Councils (NCs), and 67 Village Councils (VCs). The hilly terrain of Sama Ranizai is very popular in the region, hence the road becomes busy with a dense network of vehicles. This serves as a major transit route for millions of travelers and tourists. The traffic volume in summer, winter, and Eid holidays become increased and because of narrow and winding roads make the vulnerable to traffic crashes and related injuries or fatalities. Data from 12 UCs within Tehsil Sama Ranizai was randomly collected from RTIs victims.

**Sampling procedure**

In the current Stratified Multistage Random Sampling (SMRS) was used. The purpose of this sampling was to choose a group of respondents (sample) from the targeted population that can be representative for the whole population. For this purpose, the following procedures were adopted.

**Sample size**

Data for this study were gathered from twelve rural Union Councils in Tehsil Sama Ranizai as mentioned in Table 2.1. Total traffic crashes accounted for the year 2018 were 807 including fatal and non-fatal. This was the official record obtained from hospitals' emergencies exclusively District Headquarters Hospital Batkhela and Tehsil Headquarters Hospital Dargai. For that year, the documentation was complete and well-organized, with a dedicated register specifically for Road Traffic Accidents (RTAs). However, data from 2019 were incomplete, and records prior to 2018 were mixed with other types of emergency cases (such as falls and burns), making it difficult and time-consuming to extract relevant RTA information from the approximately 25 combined registers. Given these challenges, the year 2018 was selected as the reference period for this study. The sample size was calculated using the formula recommended by Chaudhry (1996).

(Chaudhry, 1996)

Where

$N$ = Total Road Traffic Crashes = 807,

$p$ = Population Portion = 0.50,

$q$ = 0.50,

$Z$ = Confidence Level = 1.96 and

$e$ = Margin of Error = 0.043

Based on the calculated formula, the required sample size for a population of 807 road traffic crashes survivors was determined to be 274. These individuals have experienced various degrees of injury, including disabilities, functional impairments, or other physical limitations resulting from traffic accidents. To ensure fair representation, the sample was proportionally distributed across the twelve selected Union Councils. From each UC, respondents were then randomly chosen using a simple random sampling method. The distribution of the sample across the selected UCs is presented in Table 3.1. The formula used for proportional allocation is as follows: Sample size for each stratum = (Population of stratum / Total population) × Total sample size.

$n_h = (N_h / N)*n$

Where $n_h$ is the required sample size for stratum $h$,

$N_h$ is the population size for stratum $h$.

$N$ is the total population size, and

$n$ is the total sample size

**Table 2.1:** Proportional Distribution of Sample Across Selected Union Councils

| UCs | Traffic Crash Survivors | Sample |
|---|---|---|
| Wartir | 65 | 22 |
| Malakand | 69 | 23 |
| Butkhila | 139 | 47 |

| | | |
|---|---|---|
| Tana | 56 | 19 |
| Dergai | 120 | 41 |
| Palay | 73 | 25 |
| Kharkay | 81 | 28 |
| Sakhakot | 63 | 21 |
| Koper | 35 | 12 |
| Herosha | 34 | 12 |
| Dheri | 36 | 12 |
| Gari U. Khel | 37 | 13 |
| **Total** | **807** | **274** |

**Source:** *DHQ Hospital Batkhela and THQ Hospital Dargai, 2018 official record.*

**Data Collection Tools**

For a smooth process of data collection, a tool (interview schedule) was designed for the purpose of collecting relevant and clean data that encompasses the study variables as highlighted in Table 3.2 of the conceptual framework. The translation of interview schedule was performed in national language (Urdu) for understanding of respondents. Subsequently, the tool was pre-tested with a small group of 20 victims of RTI (Kothari, 2004). After completing pre-testing stage, all inconsistencies in the tool were excluded then rectification was made prior to the start of the process of data collection.

Because of time and financial constraints, most of the data was collected by the researcher himself. However, because for cultural hinderances female respondents were not directly contacted rather their close educated relatives was trained to collect the required data.

**Reliability analysis**

Reliability analysis test is performed to test the internal consistency of the tool (interview schedule). For this study the internal consistency was ensured by performing the Cronbach's Alpa test with the sole purpose whether all item in the instrument were internally consistent or not. The threshold scale for internal consistent items were set 0.6 and above as per the Ghazali (2008) recommendations.

Cronbach's Alpa test for the current study's items were performed and found the results as highlighted in table below:

| S. No. | Scale (variable) | Cronbach's Alpha value |
|---|---|---|
| 1. | Problems in Accessing Social Support (Independent variable) | 0.88 |
| 2. | Health Satisfaction Status (Dependent variable) | 0.90 |

**Data Analysis**

After completing the data collection process and before the data feeding process the data was cleaned, entered, and coded in SPSS version 20 to get desired analysis. Data analyses were carried out by using univariate, bivariate, and multivariate statistical techniques. The independent variables were indexed primarily, then cross-tabulated with the dependent variable to measure the association between the variables. The following formula was used to get the results:

$x^2$ = chi-square
$O_i$ = observed values
$E_i$ = expected value

The process data analysis was performed at multivariate level by keeping the Cronbach's Alpha values equal or more than 0.6, then indexed followed by cross-tabulation of dependent and independent variables to determine variation. The association between the variables was measured as and when background variables were controlled. Background variables such age, gender, education and income were used in this study. The spuriousness and non-spuriousness relationship was measured, and the standard was set in this study based on the level of significance. Alongside, tau-b test was also conducted to know the strength of association. In case of spurious relationship, the standard was set as if one category of the age, gender, education or income revealed non-significant. In contrast, tau-b value was kept into consideration if all categories revealed significant value. But if there are variation tau-b values, then the relationship was considered spurious otherwise non-spurious.

## RESULTS AND DISCUSSION

### Bivariate Analysis

#### Association between Problems in Accessing Social Supports (PASS) with HSS

Social support plays a critical role in a person's life, particularly during times of illness or injury, when individuals are most vulnerable and in need of emotional and practical assistance from relatives, neighbors, and friends. In this study, respondents were asked about the challenges they faced in accessing social support following a road traffic injury (RTI), from the time of the incident until their recovery.

The independent variable, "problems in accessing social support," was measured using a 7-item scale. Table 4.38 provides detailed insights, revealing that 76.6% of respondents with low health satisfaction scores (HSS) reported experiencing disintegrated relationships (DP) with relatives and friends, compared to 52.8% who did not report such disintegration. Additionally, 77% of those in the low HSS category indicated difficulty in sharing personal fears and worries, while only 49.7% of respondents without this issue fell into the same category.

The data also showed that 77.8% of respondents with low HSS found it difficult to seek advice regarding family-related matters, compared to 53.9% who did not experience such difficulty. Similarly, 78.9% of respondents in the low HSS group reported challenges in finding someone to spend leisure time with, whereas this figure was 51.4% among those without such issues. Regarding help with household responsibilities, 74.1% of those in low HSS reported problems in arranging someone to look after their home, compared to 51.9% of their counterparts who did not report this difficulty.

One of the key indicators, the lack of a pick-and-drop facility (PDF), was reported by 76.2% of respondents in the low HSS group, in contrast to 54.2% who did not face this issue. The association between PDF and HSS was found to be statistically significant ($p = 0.001$) and demonstrated a moderately negative relationship (Kendall's Tau-b = –0.208).

All six of the initial items on the scale showed a highly significant association with HSS ($p = 0.000$). Moreover, the Kendall's Tau-b values for these items were consistently negative, indicating that victims of RTIs were more likely to report lower health satisfaction levels when social support was limited or difficult to access.

These findings are consistent with previous research. For instance, Chan and Chan (2007) emphasized the positive influence of support from friends, family members, and spouses on an individual's overall quality of life. Yohannes et al. (2018) also found that victims with limited social support were more susceptible to post-traumatic stress disorder (PTSD) than those with stronger support networks. Similarly, studies by Prang et al. (2015) and Pelmera Suárez et al. (2016) noted that inadequate support often results in worsening conditions and more pronounced long-term consequences for patients.

**Table 3.1:** Association between Problems in Accessing Social Supports with HSS

| Statement | Attitude | HSS of RTI victim | | | Chi-square value | Kendall Tau–b value |
|---|---|---|---|---|---|---|
| | | **High HSS (%)** | **Low HSS (%)** | **Total (%)** | | |
| You feel that some relatives or friends get away from you. [Disintegrated Relationship (DP)] | Yes | 22 (23.4) | 72 (76.6) | 94 (100) | $x^2 = 14.718$ p=0.000 | $T^b = -0.232$ |
| | No | 85 (47.2) | 95 (52.8) | 180 (100) | | |
| You cannot share your private worries and fears with someone | Yes | 26 (23) | 87 (77) | 113 (100) | $x^2 = 20.794$ p=0.000 | $T^b = -0.275$ |
| | No | 81 (50.3) | 80 (49.7) | 161 (100) | | |
| If you are feeling pain, you could not easily find someone to help you | Yes | 26 (24.8) | 79 (75.2) | 105 (100) | $x^2 = 14.604$ p=0.000 | $T^b = -0.231$ |
| | No | 81 (47.9) | 88 (52.1) | 169 (100) | | |
| There is no one you can turn to for advice about handling problems with your family | Yes | 81 (22.2) | 63 (77.8) | 81 (100) | $x^2 = 13.683$ p=0.000 | $T^b = -0.223$ |
| | No | 89 (46.1) | 104 (53.9) | 193 (100) | | |
| If you would like to go for some leisure, you could not easily find someone to go with you | Yes | 20 (21.1) | 75 (78.9) | 95 (100) | $x^2 = 19.792$ p=0.000 | $T^b = -0.269$ |
| | No | 87 (48.6) | 92 (51.4) | 179 (100) | | |
| If you have to go out of town for a few weeks, it would be difficult to find someone who would look after your home (the plants, pets, garden, security, etc.). | Yes | 29 (25.9) | 83 (74.1) | 112 (100) | $x^2 = 13.780$ p=0.000 | $T^b = -0.224$ |
| | No | 78 (48.1) | 84 (51.9) | 162 (100) | | |
| If you were standing 10 miles away from home, there | Yes | 20 (23.8) | 64 (76.2) | 84 (100) | $x^2 = 11.823$ | $T^b = -0.208$ |

| | |
|---|---|
| is no one who could call to come and get you. [Pick & Drop Facility (PDF)] | p=0.001 |

**Multivariate Analysis**

**Association between Problems in Accessing Social Support (PASS) and Health Satisfaction Status (HSS) on the basis of age as a controlled variable**

The association between *Problems in Accessing Social Support* (PASS) as an independent variable and *Health Satisfaction Score* (HSS) is presented in Table 4.74. The results indicate that the influence of PASS on HSS was statistically highly significant for the second and third age groups (31–45 and 46–60 years), with both showing p-values of 0.000. Correspondingly, Kendall's Tau-b values for these age groups were recorded at –0.240 and –0.365, respectively, reflecting a moderately strong negative association. In contrast, the relationship between PASS and HSS for the first (15–30 years) and fourth (61 years and above) age groups was not statistically significant, with p-values of 0.086 and 0.258, respectively. The Kendall's Tau-b values for these groups were –0.259 and –0.222, suggesting a negative trend but lacking statistical support.

Moreover, the overall significance level for the entire sample demonstrated a highly significant and negative association between PASS and HSS, with a p-value of 0.000 and a Tau-b value of –0.271. These findings suggest that age plays a moderating role in the relationship between problems in accessing social support and health satisfaction. Specifically, RTI victims aged 31 to 60 years were more likely to experience negative effects on their health satisfaction due to difficulties in accessing social support compared to other age groups. This age group appeared particularly vulnerable in terms of facing barriers to support and health-related assistance in the study area.

These findings are consistent with those of the U.S. Department of Health and Human Services (USDHHS, 2016), which noted that access to social support often varies with age, and older individuals tend to encounter more challenges. As the age of an individual increases, the likelihood of facing barriers in accessing social support also rises. Limited or inadequate access to social support is strongly associated with lower levels of health satisfaction, reinforcing the critical role that age and social support systems play in post-injury recovery outcomes.

**Table 3.2** Association between PASS and HSS based on age as a controlled variable

| Age group | STATISTICS (Chi-square-x2, P-value, Kendall-$T^b$) | |
|---|---|---|
| 1st Age Group (below 20 years) | $x^2 = 2.946$<br>p=0. 086<br>$T^b = –.259$ | $x^2 = 20.192$<br>p=0.000<br>$T^b = –.271$ |
| 2nd Age Group (21 – 30 years) | $x^2 = 12.234$<br>p=0.000<br>$T^b = –.240$ | |
| 3rd Age Group (31 – 60 years) | $x^2 = 13.000$<br>p=0.000<br>$T^b = –.364$ | |

| | |
|---|---|
| 4th Age Group (above 60 years) | $x^2 = 1.280$<br>p=0.258<br>$T^b = -.222$ |

**Association between PASS and HSS controlling gender as background variable**

Table 3.3 presents the association between *Problems in Accessing Social Support* (PASS) and *Health Satisfaction Status* (HSS), controlling the gender of respondents. The analysis reveals that among male respondents, the association between PASS and HSS was highly significant, with a p-value of 0.000. Kendall's Tau-b value for males was –0.285, indicating a moderate negative correlation. In contrast, among female respondents, the association was statistically non-significant (p = 0.094) and weakly negative, as shown by a Kendall's Tau-b value of –0.026.

Furthermore, the overall chi-square and Kendall's Tau-b values for the entire sample were both highly significant and negative (p = 0.000; Tau-b = –0.271).

The disparity in Tau-b values between males and females indicates that the observed relationship between PASS and HSS may be spurious, influenced by gender as a moderating factor. This suggests that male RTI victims were more likely to report difficulties in accessing social support during their recovery period, which in turn correlated with lower health satisfaction.

These findings align with the report by the U.S. Department of Health and Human Services (USDHHS, 2016), which emphasizes that access to care varies based on factors such as gender, sexual orientation, and geographic location. The current study suggests that male victims tend to receive less social support from friends and family during periods of illness or injury, leading to reduced health satisfaction. Limited interaction with one's social network during morbidity is often associated with emotional distress and diminished well-being, particularly among men.

Interestingly, satisfaction levels during illness differed between genders, with males reporting lower health satisfaction than females. This observation supports the findings of Stålnacke (2011), who noted that women generally reported higher satisfaction levels during periods of morbidity. Cultural norms may explain this discrepancy women often spend more time at home and may better adapt to isolation without relying heavily on external social interactions. In contrast, men are more accustomed to engaging in social activities outside the home, making it harder for them to cope with isolation during illness.

Additionally, Oliveira et al. (2014) found that various dimensions of social support differ significantly by gender, particularly in the context of leisure-time physical activities. These activities play a vital role in mental well-being, and adequate social support positively influences participation. As Ekegren et al. (2020) observed, increased physical activity can alleviate psychological distress and frustration, thereby enhancing both social integration and overall satisfaction. Therefore, insufficient support during recovery may disproportionately affect men, contributing to lower health satisfaction outcomes.

**Table 3.3** Association between PASS and HSS controlling gender as a background variable

| GENDER | STATISTICS (Chi–square-$x^2$, P-value, Kendall-$T^b$) | |
|---|---|---|
| Male | $x^2 = 21.172$<br>p=0.000<br>$T^b = -.285$ | $x^2 = 20.192$<br>p=0.000<br>$T^b = -.271$ |
| Female | $x^2 = 0.009$<br>p=0. 923<br>$T^b = -.026$ | |

**Association between PASS and HSS in the context of education as controlled variable**

Table 3.4 highlights the findings of the association between Problems in Accessing Social Support (ASS) and the Health Satisfaction Status (HSS) based on education as a control variable. The influence of access to social support on the HSS in the context of Illiterate was non-significant, where the p-value = 0.425 while the direction of association based on the tau-b value is weak negative ($T^b = -.119$). In contrast, such influence of variables in the context of respondents having secondary education were noted highly significant and moderate negative (p=0.000 & $T^b = -.337$). Furthermore, the influence of ASS on HSS in the context of the respondent having higher education was non-significant (p=0.502); however, extremely weak negatively ($T^b = -.089$) associated.

The values of level of significance of the entire table show a highly significant (p=0.000) and negative ($T^b = -.271$) association between the access to social support and HSS for all educational categories. Based on Kendall's tau-b values, respondents having low access to social support were observed with low satisfaction of health status. Social support is an essential element for people living in society, and its importance increased during the period of morbidity. According to Cohen, et al., (2000) social support is a process of social relationships promoting health and well-being. If the patients receive good social support from friends and family members, their health would have positively recovered with no further deterioration.

**Table 3.4** Association between PASS and HSS based on education as a control variable

| EDUCATION | STATISTICS (Chi–square-$x^2$, P-value, Kendall-$T^b$) | |
|---|---|---|
| Illiterate | $x^2 = 0.635$<br>p=0.425<br>$T^b = -.119$ | **$x^2 = 20.192$**<br>**p=0.000**<br>**$T^b = -.271$** |
| Secondary Education (Matric/Intermediate) | $x^2 = 19.768$<br>p=0.000<br>$T^b = -.337$ | |
| Higher Education (Graduation above) | $x^2 = 0.441$<br>p=0.507<br>$T^b = -.089$ | |

**Association between PASS and HSS based on family income as control variable**

Table 3.5 presents the association between the independent variable—*Problems in Accessing Social Support* (PASS)—and the dependent variable—*Health Satisfaction Status* (HSS)—with respondents' monthly income as a control variable. Monthly income was categorized into two groups: the Low-Income Group (LIG), comprising those earning less than PKR 16,500 per month, and the High-Income Group (HIG), comprising those earning more than this threshold.

For respondents in the LIG, the association between PASS and HSS was found to be highly statistically significant ($p = 0.000$), with a moderate negative relationship indicated by a Kendall's Tau-b value of –0.460. Similarly, the association remained statistically significant within the HIG ($p = 0.000$), with a comparable Tau-b value of –0.430, also reflecting a moderate negative relationship.

Moreover, the overall significance values for the entire table confirmed a highly significant and negative association between PASS and HSS ($p = 0.000$; Tau-b = –0.450). The relatively small variation between Tau-b values across both income groups suggests that monthly income did not substantially influence or alter the relationship between PASS and HSS. In other words, the negative impact of problems in accessing social support on health satisfaction appears consistent regardless of income level.

These findings indicate that the effect of social support issues on health satisfaction is not income-dependent and may represent a more universal challenge faced by road traffic injury (RTI) victims. Regardless of financial standing, individuals with limited access to social support are more likely to experience reduced health satisfaction during the recovery process.

**Table 3.5** Association between PASS and HSS based on family income as control variable

| MONTHLY INCOME | STATISTICS (Chi–square-$x^2$, P-value, Kendall-$T^b$) | |
|---|---|---|
| Less than PKR16500<br>Low Income Group (LIG) | $x^2 = 42.657$<br>p=0.000<br>$T^b = –.460$ | $x^2 = 55.408$<br>p=0.000<br>$T^b = –.450$ |
| Equal or more than PKR16500<br>High Income Group (HIG) | $x^2 = 13.296$<br>p=0.000<br>$T^b = –.430$ | |

**Conclusion**

The results of the study concluded that there is a consistent and significantly negative association between the independent variable (problems in accessing social support) and dependent variable (health satisfaction status) among victims of road traffic injuries. Irrespective of background variables (age, gender, education, or income) victims with limited access to emotion, or logistical support reported a low level of health satisfaction. This relationship was more prone between 31-60 year of age-group with male dominancy having secondary education. This result suggests that some demographic groups are more vulnerable to the negative effects of social support deficits. The result is supported with global literature, asserting that adequate social from family, friends,

community, and employer is an essential determinant of post-injury health satisfaction. It is also a helpful tool in overall recovery outcomes.

**RECOMMENDATION**

1. Structured support network can help to assist RTI victims during recovery period. Local government organizations and non-governmental organizations can play a vital role.
2. The middle-aged between 31-60 years of age should be the priority of health programs. This group is more prone to isolation and low health satisfaction status.
3. Hospitals and rehabilitation centers should offer psychosocial counseling and peer support sessions as part of post-injury care, particularly for those with low satisfaction levels.
4. An awareness regarding the importance of social support must be campaigned through community workshops emphasizing strongly engage with RTIs victims.
5. Incorporating social support should be a formal component in national road safety and public health policies. Policymakers should keep into consideration the proper resources allocation to build support structure for injury victims.

**Reference**

Prang, et al. (2015). Recovery from musculoskeletal injury: the role of social support following a transport accident. Health and quality of life outcomes, 13(1), 97. http://dx. doi.org/10.1186/s12955-015-0291-8

Yohannes, K., Gebeyehu, A., Adera, T., Ayano, G., & Fekadu, W. 2018. Prevalence and correlates of post-traumatic stress disorder among survivors of road traffic accidents in Ethiopia. International journal of mental health systems, 12, 50. Doi:10.1186/s13033-018-0229-8

Chan, S. C., & Chan, A. P. 2007. User satisfaction, community participation and quality of life among Chinese wheelchair users with spinal cord injury: a preliminary study. Occupational Therapy International, 14(3), 123-143.

Palmera-Suárez, R., López-Cuadrado, T., Brockhaus, S., Fernández-Cuenca, R., Alcalde-Cabero, E., & Galan, I. 2016. Severity of disability related to road traffic crashes in the Spanish adult population. Accident Analysis & Prevention, 91, 36-42.

McGarry, S., Ward, C., Garrod, R., & Marsden, J. 2013. An exploratory study into the unmet supportive needs of breast cancer patients. European journal of cancer care, 22(5), 673-683.

Valizadeh, S., Dadkhah, B., Mohammadi, E., & Hassankhani, H. 2014. The perception of trauma patients from social support in adjustment to lower-limb amputation: A qualitative study. Indian journal of palliative care, 20(3), 229.

Chaudhry, M. I., & Khan, M. A. 1968. Pakistani society: a sociological analysis. Noorsons.

Ghazali, S. S. (2008). Reliability and Validity of Research Instruments. Islamabad: National Book Foundation.

U.S. Department of Health and Human Services. (2016). HHS action plan to reduce racial and ethnic health disparities: Implementation progress report 2011–2014. Washington, DC: U.S. Government Printing Office.

Stålnacke, B. M. 2011. Life satisfaction in patients with chronic pain–relation to pain intensity, disability, and psychological factors. Neuropsychiatric Disease and Treatment, 7, 683.

Oliveira, A. J., Gomes, T. N., Lima, T. R., & Silva, D. A. S. (2014). Social support and leisure-time physical activity: Evidence from a population-based study in Brazil. BMC Public Health, 14(1), 1–8. https://doi.org/10.1186/1471-2458-14-849

Ekegren, C. L., Climie, R. E., Simpson, P. M., Owen, N., Dunstan, D. W., Veitch, W., & Gabbe, B. J. 2020. Physical Activity and Sedentary Behavior 6 Months After Musculoskeletal Trauma: What Factors Predict Recovery? Physical Therapy, 100(2), 332-345.

trauma. Injury, 41(8), 787-803.

Cohen, S., Underwood, L. G., & Gottlieb, B. H. (Eds.). 2000. Social support measurement and intervention: A guide for health and social scientists. New York, NY, US: Oxford University Press. Pages: 3-4 http://dx.doi.org/10.1093/med:psych/9780195126709.001.0001