



Perceptions of healthcare workers on road traffic injuries in Namibia: an untapped source of expertise

Mitchel Chatukuta, Nora Groce, Jennifer S. Mindell & Maria Kett

To cite this article: Mitchel Chatukuta, Nora Groce, Jennifer S. Mindell & Maria Kett (2021): Perceptions of healthcare workers on road traffic injuries in Namibia: an untapped source of expertise, *Disability and Rehabilitation*, DOI: [10.1080/09638288.2021.1929512](https://doi.org/10.1080/09638288.2021.1929512)

To link to this article: <https://doi.org/10.1080/09638288.2021.1929512>



© 2021 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



Published online: 04 Jun 2021.



Submit your article to this journal [↗](#)



Article views: 66



View related articles [↗](#)



View Crossmark data [↗](#)

Perceptions of healthcare workers on road traffic injuries in Namibia: an untapped source of expertise

Mitchel Chatukuta, Nora Groce, Jennifer S. Mindell and Maria Kett

Research Department of Epidemiology and Public Health, University College London (UCL), London, UK

ABSTRACT

Background: Road traffic injuries (RTIs) are a major problem worldwide. Namibia is one of the worst affected countries globally; however, there has been very little research on RTIs. When RTIs are discussed, the focus usually is on statistics, and healthcare workers (HCWs) are rarely asked to share their experiences and insights on the impact of RTIs on the healthcare system in which they work.

Methods: In this study, we investigated the experiences and opinions of HCWs concerning RTIs in Namibia. In our survey, we asked them to reflect on RTIs as a public health issue, and on how they view national road safety efforts.

Results: HCWs were knowledgeable about RTIs and the related burden of injury, and problems with road safety in Namibia, including the lack of a coordinated multi-sectoral approach. Despite this and being often very involved with care, HCWs are rarely or never consulted by the Namibian government or ministries that deal with road safety and related matters.

Conclusions: It is suggested these findings will contribute to discussions about how HCWs can contribute to addressing and improving the care provided to people injured in RTIs in Namibia and other low and middle income countries with similar contexts.

ARTICLE HISTORY

Received 7 September 2020

Revised 7 May 2021

Accepted 9 May 2021

KEYWORDS

Health care workers (HCWs); public health approach; road traffic injuries (RTIs); disability; Namibia

► IMPLICATIONS FOR REHABILITATION


- Road traffic injuries (RTIs) are a major global public health challenge with over 1.2 million deaths and a high burden of disability.
- Namibia is one of the worst affected countries globally.
- Despite being involved in a national programme specifically targeting victims of RTIs, healthcare workers (HCWs) in Namibia are rarely included in road safety programming and policy making.
- Our study shows HCWs were knowledgeable about RTIs and the related problems and their inclusion in policy making has potential benefits.

Introduction

Road traffic injuries (RTIs) are now a major global public health challenge with over 1.2 million deaths and between 20 and 50 million injured annually [1]. Low and middle income countries (LMICs) are disproportionately affected, sustaining 85–90% of all RTI related global deaths and injuries [2]. However, despite being preventable, RTIs are neglected in most LMICs, and many countries have not budgeted for RTI research or prevention [3]. Public health practitioners in these countries have also been slow to be involved in road traffic safety as it continues to be seen mainly as a responsibility of the transport sector [4]. In many LMICs, RTIs have also been generally considered inevitable, the result of random and unpredictable events [5]. Consequently, many LMICs have made much less effort to understand and prevent RTIs than they have made to understand and prevent communicable and non-communicable diseases that cause less harm [5].

In comparison, in high income countries (HICs), which previously had high rates of mortality and morbidity associated with RTIs, there

has been a slow and steady decline in RTIs over the last four decades, which is attributable to a combination of interventions with specific strategies and targeted policies [6]. In light of this, the World Health Organisation (WHO) has mandated that all countries undertake more research and data collection on RTIs [7]. Although RTIs are often framed as an issue of concern to the transportation sector, a particularly effective strategy in HICs has been adopting a multi-sectoral and public health approach to road safety [7]. “The public health approach to RTI prevention is based on science. It draws on knowledge from medicine, biomechanics, epidemiology, sociology, behavioural science, criminology, education, economics, engineering and other disciplines” [7,p.3]. The WHO reports that countries in which the health sector is involved in road safety have seen more improvements than those where road safety is considered the sole domain of the transportation sector. Due to this, WHO has advocated for the involvement of health professionals in road safety in all countries as well as a coordinated multi-sectoral approach incorporating the different scientific fields noted above [7].

CONTACT Nora Groce  nora.groce@ucl.ac.uk 

© 2021 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way.

Of all the regions, sub-Saharan Africa (SSA) is the worst affected, with the highest global road traffic fatality rate [8–10]. In Namibia, RTIs are the third leading cause of death, after HIV/AIDS and malaria [11], accounting for 36% of all injury-related deaths [12]. According to the Namibian Statistics Agency (NSA), fatality rates due to RTIs rose from 26/100 000 in 2010 to 30 in 2013 [13]. Injury rates also increased over the same period from 244 to 277/100 000 population [13]. More recently, the WHO Global Status Report of 2018 reported a fatality rate of 30/100 000 population in Namibia, one of the highest globally [14].

This increase in RTIs is linked to national economic growth, rapid urbanisation, and growing car ownership in Namibia [15–17]. However, similar to other SSA countries, there has been very little research on RTIs in Namibia. Although there is solid literature about other key public health concerns such as HIV, TB, and malaria, this has not been done with RTIs. A multi-sectoral and public health approach to Namibia's road safety system is also missing [18]. Namibian agencies involved in road safety have been criticised for adopting unilateral strategic plans and running separate, uncoordinated safety campaigns simultaneously [19]. An important related problem is that whilst road safety falls under seven ministries, there is no one ministry which has primary responsibility. Furthermore, there is no clear communication or coordination between the ministries in terms of strategies to enhance road safety [20]. The WHO reports that in countries such as Namibia, where the institutional arrangements for road safety are fragmented, road safety funding is often overlooked or given lower priority than competing problems [7]. Simply put, it is no ministry's primary responsibility. This may explain why the funding for the NSRC, the main agency involved in road safety, has been cut significantly by the Namibian government in 2016 and 2017 [20,21].

Namibia is also of particular interest because it has set-up the Motor Vehicle Accident Fund (MVAf) which derives all its income from a fuel levy determined annually by the Ministry of Mines and Energy [22]. The fund has been established specifically to provide for medical costs and rehabilitation, including aids and appliances, for road injury survivors. In the event of a serious or permanent RTI-related injury, a lump sum payment and a caregiver allowance are also provided regularly.

The fund acknowledges the importance of healthcare workers (HCWs) in the care of injury survivors. Under the aegis of the fund, when an RTI occurs the victim is immediately assigned a case manager to ensure ongoing coordinated medical care and, where needed, rehabilitation and support. The care itself is delivered by a group of HCWs which includes trauma doctors, nurses, rehabilitation professionals, and mental health professionals. However, despite being involved in this national programme specifically targeting victims of RTIs, the HCWs are rarely included in road safety programming and policy making related to the design of appropriate strategies, road safety public health campaigns nor institutional responses to assist survivors in their recovery [17]. This lack of involvement is a missed opportunity as the MVAf health team is uniquely placed to have a thorough understanding of how RTIs are preventable, to speak to the fact that they are a major drain on the health care system, and more broadly, on socio-economic development and civil society. They could be powerful allies in public health efforts (including working with government) to create public health campaigns to prevent RTIs, as well policies and programs to improve the quality of lives of survivors.

This research investigated the experiences and opinions of HCWs involved in the delivery of care and services to people with RTIs in Namibia. This study was part of a larger study on the long-term impact of RTIs in Namibia.

Methods

Data collection

The data collection for this study entailed conducting semi-structured interviews with HCWs involved in caring for RTI injured people in Namibia. We developed the semi-structured questionnaires based on factors relevant to RTIs [5–7]. Some of these factors included injury type and severity, emergency care and hospitalisation, rehabilitation and healthcare costs associated with the injury. The semi-structured questionnaires included both closed questions to elicit information such as: "Based on your experience do road-injuries have any impact on the employment situations/prospects of survivors?" with "yes" or "no" responses, and open-ended questions, where more detailed responses were encouraged. An example is: "Can you tell me about road-injuries in Namibia?" All the interviews were carried out in Namibia's official language, English. The questionnaire also collected demographic and socio-economic information such as age, gender, and level of education. The full survey tool has been described and is available in the University College London thesis depository (Titled: M. Chatukuta 2019 Thesis).

Study site and setting

In all, 20 interviews were completed with HCWs. Thirteen were carried out in Windhoek, the capital city, and the rest conducted in other parts of the country, including Walvis Bay, Otjiwarongo, and Swakopmund. The data were collected over a period of five weeks. The recruitment processes are described below.

Sampling methods used

Purposive sampling was used to locate the HWCs. We sought to interview a very specific subgroup of HCWs: those who largely or specifically work with RTIs under the national Motor Vehicle Assistance Fund (MVAf) programme. The recruitment process started with an internet search of Namibian service units to identify HCWs involved in the care of RTI victims or those who had insight or influence on this process. This identification was done by the first author (MC). Eight individuals were initially approached via an introductory e-mail, which was followed by a phone call and invitation to participate in this study. A further seven HCW professionals who met study criteria were recruited via snowball sampling. The demographics are described below.

Interview procedures

The interviews were each conducted individually, at a time and place most convenient for the HCW and were carried out by first author (MC). The interviews lasted 40 min on average and were all recorded. No monetary gifts or benefits were given and participation in this study was voluntary.

Table 1 presents the demographic characteristics of the HCWs. Fifty-five percent ($n=11$) were male, and 45% ($n=9$) were female. The HCWs interviewed worked in different regions and were from both the public and private sectors. They included medical, nursing, rehabilitation, and mental health professionals.

Analysis

Analysis commenced with review of tapes leading to full transcription of audio recordings. The transcriptions were all

Table 1. Demographic details of HCWs.

Participant	Age	Gender	Occupation	Highest level of qualification	Years of work experience working with patients involved in road injuries	Institution type	Region
P1	33	Male	Human Rights and Disability Officer	Bachelor of Arts degree	3	Charity/NGO	Khomas
P2	32	Male	Basic Grade Occupational Therapist	BSc Honours Degree	2	Government	Khomas
P3	29	Female	Senior Grade Occupational Therapist	BSc Honours Degree	5	Government	Erongo
P4	35	Female	Chief Physiotherapist	BSc Honours Degree	11	Government	Khomas
P5	25	Female	Senior Grade Occupational Therapist	BSc Honours Degree	3	Government	Khomas
P6	33	Female	Senior Grade Occupational Therapist	BSc Honours Degree, Postgraduate Diploma	10	Government	Oshana
P7	34	Male	Senior Grade Physiotherapist	BSc Honours Degree	10	Government	Otjondjupa
P8	40	Male	Senior Orthotist/Prosthetist	BSc Honours Degree	12	Government	Khomas
P9	36	Female	Senior Registered Orthopaedic Nurse	Diploma	11	Private	Khomas
P10	36	Male	Chief Physiotherapist	Master's in Public Health degree	9	Government	Khomas
P11	31	Male	Basic Grade Physiotherapist	BSc Honours Degree	7	Government	Caprivi
P12	29	Female	Basic Grade Occupational Therapist	BSc Honours Degree	6	Government	Khomas
P13	36	Male	Chief Orthotist/Prosthetist	MSc Degree in Biomedical Engineering	12	Government	Khomas
P14	33	Female	Medical Officer-Spinal Unit	Medical degree	4	Government	Khomas
P15	38	Female	Senior Social Worker	BSc Honours Degree	4	Government	Khomas
P16	37	Male	Community Rehabilitation Specialist and Lecturer	Master's in Public Health degree	11	Private	Otjondjupa
P17	38	Female	Practice owner-Occupational therapist	Master's in Business Management Degree	14	Private	Khomas
P18	36	Male	Rehabilitation Quality Specialist at MVAF	Master's in Public Health degree	8	Private	Khomas
P19	36	Male	Chief Regional Occupational Therapist	Master's in Public Health degree	9	Government	Omaheke
P20	36	Male	Practice owner-Occupational Therapist	Master's in Public Health degree	10	Private	Oshana

performed within seven days of the original interview by the lead author (MC).

Data from interviews were analysed using thematic analysis along the six-step framework analysis promoted by Braun and Clarke [23]. This framework has been noted to provide a clear and usable framework for conducting analysis and thus is amongst the most widely used approach in thematic analysis [24]. A key advantage of thematic analyses is that it is also beneficial for producing qualitative analyses suited to informing policy development, in addition to facilitating data interpretation [23]. Due to the relatively small sample size, the data were coded manually. An inductive approach was utilised with no pre-defined themes to guide the coding process. Thus, the codes formulated were data-driven.

Ethical considerations

Ethical approval was obtained from both the Ministry of Health and Social Services in Namibia (no. 17/3/3) and the UCL Ethics Committee (no. 7417/001). Participation in interviews was entirely voluntary. Participants were provided with information sheets and notified that confidentiality would be maintained throughout the study. Following this, they were asked to sign a consent form which ensured they understood the information given and which gave them a chance to ask questions. This form also ensured they were informed about their right to withdraw at any time.

Findings

Road traffic injuries are a major problem in Namibia

A main theme to come out from the interviews with HCWs was that RTIs are potentially a largely preventable source of injury and death that represent a significant and disproportionate drain on the current health care system in Namibia, with high rates of significant injury, disability, and death. Many ($n = 18$, 90%) of the respondents were aware that the rate of deaths and injuries in Namibia was one of the highest regionally and globally. As one informant, P14, a spinal doctor at the Windhoek Central Hospital Cord Injuries Unit (the only spinal unit in the country), reported;

It is a big problem, because now Namibia stands at number one in the world regarding fatalities due to road crashes. So, it's bad. Really, really bad.

Several ($n = 12$, 60%) of the respondents believed that it was the high rate of injury and death which had made it necessary for the formation of the MVAF to support injury victims.

It's such a big problem and I think that's part of the reason why in the last couple of years the country actually set up the MVAF, specifically to fund the rehabilitation of RTI victims. (P10, Physiotherapist, Katutura hospital)

Moreover, RTIs were identified by 80% of the HCW participants as being the cause of most of their current patient pool. For example, a doctor in the spinal unit noted that 85% of spinal injuries treated in her unit were due to RTIs. When asked about the

proportions of people permanently disabled due to RTIs, the general consensus amongst all HCWs interviewed was that RTIs were responsible for a high proportion of the burden of disability in Namibia. However, none of the HCWs interviewed were aware of any statistics that show exactly how high the percentage of all RTI-related disabilities nationally are. This is unsurprising as currently this information was not being compiled anywhere. Some ($n=4$, 20%) of those interviewed suggested that the rate of RTIs that contribute to the national statistics may be available in the latest national *Disability Report* [25], which was based on the most recent national census. However, the *Disability Report* does not have statistics on the actual cause of any disabilities. The HCWs who were aware of the absence of these statistics in the *Disability Report* were correct in understanding that such statistics were not currently being collected, and viewed this as problematic. They felt that collation and publication of such information would be vital to highlight the severity of the problem of RTIs to policy makers. Some ($n=8$, 40%) of them also noted that due to their heavy involvement in the long-term care of RTI survivors, they were well placed in being involved in collation and dissemination of such information if a system or framework was provided by the government to allow them to do this.

Factors associated with road traffic injuries in Namibia

Ninety percent of the respondents were eager to point out factors associated with the high rates of crashes, deaths, and injuries, including drinking and driving, speeding, and reckless driver behaviour. Other ($n=6$, 30%) respondents also reported that young drivers tended to drive more recklessly. Several ($n=12$, 60%) respondents highlighted poor law enforcement as a problem. The respondents also noted that certain time periods were associated with a higher number of crashes (i.e., at the end of the month, when people are paid, and presumably have money to buy more alcohol and drugs, and at festive periods like Easter and public holidays, when many travel long distances to visit family and friends).

Efforts to reduce road traffic injuries in Namibia

Ninety-five percent of the HCWs interviewed reported that some limited efforts were being made to tackle the problem of RTIs in Namibia through public safety campaigns. However, most ($n=16$, 80%) felt these campaigns were largely ineffective, with a number reporting that the public safety campaigns were mostly confined to holiday periods like Easter and public holidays when authorities anticipated people would travel more. The HCWs reported that this was ineffective as in their own experiences, crashes were high throughout the year. Others ($n=11$, 55%) felt that the campaigns were haphazard and lacked effective coordination between the road safety agencies, government, and health organisations, which caused further confusion amongst the general public. Respondents also commented that there was a general lack of research on RTIs. Due to this, they felt the safety campaigns conducted in Namibia lacked an evidence base and were further limited by a lack of evaluations to determine their efficacy.

In addition, 85% of the HCWs noted that there was not enough monetary and human investment in road safety. When questioned about human investment, some discussed the lack of public health involvement, and specifically reflected on how, in their opinion, there were not enough public health professionals involved. Several ($n=11$, 55%) pointed to the lack of any coherent public health campaigns; others reflected on the fact that the government, the media and members of the general public seemed unaware of the amount of injury and suffering caused by

RTIs that they were observing on a daily basis. Several ($n=11$, 55%) commented further that they felt that the rate of crashes, deaths, and severe injuries coming through their hospital and clinics was actually worsening as more people could afford cars and the number of drivers, passengers continued to increase.

Worst affected groups

The respondents also discussed the demographics of the problem and correctly reported that younger age groups and males, particularly those of working age, were the worst affected. Notably, 90% of the respondents reported that those from lower socio-economic backgrounds were most adversely affected by RTIs. For example, P18, a Rehabilitation Quality Specialist at the MVAF explained that blue collar workers were at most risk due to the form of transportation they used.

It's security guards, it's construction workers, because sometimes they sit at the back of big bakkies (trucks). There are no seatbelts. If anything happens, all those guys will have serious injuries because they will just be falling out of the car. (P18, Rehabilitation Quality Specialist)

Impact of road traffic injuries in Namibia

All the HCWs reported that based on their experiences, many injuries resulting from RTIs that were serious enough to warrant health care services through the MVAF were also associated with long-term physical and mental health problems affecting survivors. Symptoms and conditions commonly reported associated with RTIs included chronic pain, stress, depression, and post-traumatic stress disorder. Sixty percent of those interviewed also noted that they had observed that, even minor injuries affected individuals in the long-term, resulting in poorer overall quality of life.

It's very life changing, especially for people who sustain serious injuries and require long-term care. But even for those who suffered not-so-severe injuries. They are affected throughout the course of their lives because it interferes with their function. (P11, Physiotherapist, Windhoek)

Reasons given for this included physical restriction in the ability to do activities of daily living, loss of independence, and mobility problems. With regards to mental health issues, 90% of HCWs noted that RTIs, even minor injuries, were linked with higher levels of mental health problems. They went on to link mental health problems to increased incidence of substance abuse and suicidal ideation amongst the road injury survivors they worked with compared to the general population. These RTI related mental health problems are further linked to pain, poor quality of life, financial problems, loss of employment and social problems.

Almost half ($n=9$, 45%) of the respondents also reported RTIs as worsening the cycle of poverty in Namibia, with families being driven into poverty with the death of breadwinners and injury victims losing their employment and falling into financial difficulties.

Improvement of outcomes for RTI survivors

Not surprisingly, HCWs also shared ideas of ways in which they thought the lives of injury survivors who developed long-term disability could be improved based on their experiences of working with them. They felt that the MVAF was playing a crucial role in enabling access to medical care and rehabilitation following injury. They also offered ideas of how this system could be improved – for example, P18 felt that even with financial support from the MVAF, RTI survivors in less urban areas were less likely

to access rehabilitation due to the scarcity of these services outside the capital city of Windhoek.

Yeah, I think the biggest challenge is that rehabilitation services are concentrated in the urban areas. Not just the urban areas, but the main major urban areas. That's where you find most of the physios, OTs. Speech therapists, I think there are only in the capital city, or maybe in the coast, one or two. So if a person is coming from a rural place, for them to access these services, they need to travel to those particular centres where they can get such services. (P18, Rehabilitation Quality Specialist)

He felt services would be more accessible if there were more pay incentives for rehabilitation professionals to work outside Windhoek and also suggested more outreach work by HCWs to reach isolated populations of RTI survivors. All HCWs also expressed the opinion that the mental health service for RTI survivors was inadequate even in the capital city, meaning that a considerable number of them did not receive needed care.

I'd want to say we are lacking in that area because we rarely ever send people for that type support. I had a lady that lost her kids in a car accident. Not even once did I remember referring to a psychologist. So I think we are lacking in that area. There is a need for improvement. (P11, Physiotherapist, Windhoek)

In order to improve this, several ($n=11$, 55%) HCWs interviewed suggested training more mental health workers. They also highlighted the fact that most people in Namibia had smart phones and suggested the use of Information and Communications Technology such as video phoning in order to expand psychological services to RTI survivors in more remote areas who found it difficult to commute to see service providers.

HCWs also discussed financial problems related to RTIs and how in addition to support given by the MVAf, the Namibian government was providing a disability grant for those who qualified. Whilst 40% of HCWs praised the Namibian government for having this grant in place (compared with other African countries), all HCWs felt that the amount awarded was too little and needed to be reviewed.

Ah it's not enough! Especially in the urban areas like Windhoek. The cost of living is too high! So that amount, if you are only receiving that and there is no other income, it is not going to be enough. (P13, Orthotist, Windhoek)

All HCWs also felt that the financial problems were related to a lack of employment opportunities for the RTI survivors they had worked with. The main issues they felt was the inability to go back to activities and work done by RTI victims before their accidents due to pain and physical limitations linked to the accidents. The lack of vocational retraining centres (VCTs) was also noted, with no facilities available to retrain those unable to return to the same type of work as prior to their injury. For example, an occupational therapist drawing upon statistics from the spinal unit where he was employed noted:

From our own statistics, of the 40–50 patients that we saw last year, 20 were working before the injury and only two are back in work now. (P2, Occupational therapist, Windhoek)

Seventy percent of HCWs suggested the need for VCTs to be established and highlighted the high numbers of RTI survivors not being able to find work post-injury as evidence of the need for this. Related to this, they also felt data collation and publication on numbers of RTI survivors unable to get back into work was important to awaken policymakers to the magnitude of the problem.

Another common reason given by HCPs for the difficulty in finding employment or returning to work following road injury was discrimination by employers. Several ($n=9$, 45%) participants

reported that employers were not willing to take back RTI survivors or hire those in wheelchairs or using aids because they believed they would not be as productive:

The problem is stigmatisation and discrimination because immediately, when they see that you are now using a wheelchair, they just start thinking like; how will this person be able to cope up with our work or whatsoever? There are only a few of them that have gone back to work. (P15, Social worker, Windhoek)

Several ($n=8$, 40%) of the HCWs interviewed also noted that even though laws existed to protect the employment rights of injury survivors and people living with disabilities, in their experience these laws were not being adequately implemented. Thus, they suggested there should be improved and effective monitoring of the laws by the Ministry of Labour.

Types of injuries and resource management

Ninety-five percent of the respondents reported that fractures of the lower and upper limbs and soft tissue injuries were the commonest injuries resulting from road crashes in Namibia. Other common RTI-related injuries included contusions, amputations, nerve injuries, head injuries, and spinal injuries. The MVAf employee mentioned in section "Road traffic injuries are a major problem in Namibia" had knowledge of the data collated on annual road injuries in 2016 and reported that severe injuries such as spinal and head injuries had formed about 7–11% of total road injuries.

In terms of injuries, I think they are getting to about 500 and something per month. So that's a big number. And you have other injuries that are very severe, like spinal cord injuries, traumatic brain injuries. Those are roughly around 7 to 11% of injuries, so you can just imagine the burden. (P18, Rehabilitation Quality Specialist)

All those interviews reported RTIs also divert resources from people injured or disabled through non-RTI related causes. As the MVAf is well run and successful, it has first call on national resources related to individuals with injuries or disabilities. All HCWs were aware that should the rate of RTIs be reduced by effective public health and road safety enforcement efforts, health care resources (including their own time and expertise) could effectively be redirected to children and adults with non-RTI related injuries or disabilities who currently compose an underserved backlog of patients throughout the country.

Discussion

Healthcare workers interviewed were in direct contact with the victims of road injuries and showed uniformity in their views on RTIs. Despite the limited involvement of the health sector in road safety policy and programmes, the HCWs interviewed were very knowledgeable about RTIs in Namibia and regarded them as a major public health problem responsible for high rates of injury and death. In fact, HCWs consistently were aware that Namibia has one of the highest rates of deaths and injuries globally. The information they gave corresponded with statistics on RTIs in Namibia and global comparisons which have been done by the WHO.

Significantly, the HCWs regarded RTIs as not only a public health problem but also as a potentially preventable health care issue. They attributed a reduction of individuals' quality of life and ongoing health and social problems to RTIs, both major and minor. In addition, they were very knowledgeable about the demographics of RTIs, correctly highlighting the groups at most risk and also discussing the associated risk factors. Importantly,

they also had a range of ideas and recommendations about how the lives of road injury survivors could be improved, which is significant considering that they are first contact carers for RTI victims and have a great understanding of how RTIs impact on their lives in the long-term. Most of the HCWs interviewed also saw RTIs in a yet wider perspective, a socio-economic problem responsible for worsening the cycle of poverty and inequality in Namibia and counterproductive for the economic development of the country. This matches with literature on RTIs in Namibia. Notably, they also highlighted many of the problems with road safety in Namibia known to RTI experts, including poor investment and the lack of a coordinated, public health approach.

As noted in section “Introduction”, the WHO has advocated that health professionals to be involved in road safety by adopting a coordinated public health and multi-sectoral approach, an approach which is lacking in Namibia. Our findings show that HCWs in Namibia are aware of the issues but lack established pathways to add their observations and concerns to a national cross-disciplinary dialogue on RTIs.

An example of how the involvement of HCWs in road safety has been beneficial is Sweden’s Vision Zero [26]. This strategy to eliminate all traffic fatalities and severe injuries, whilst increasing safe, healthy, and equitable mobility for all involves a strategy of building and sustaining leadership, collaboration, and accountability amongst a diverse group of stakeholders including transportation professionals, policymakers, HCWs, police, and community members [26]. This was first implemented in Sweden in the 1990s, and has proved successful across Europe and some states in the USA where it has been adopted [7]. Thus inclusion of HCWs in Namibia in road safety’s plans is an essential step forward in enhancing road safety.

It is significant to note that when asked about the total levels of disability related to RTIs, none of the HCWs were aware of any statistics although they did highlight that they were aware RTIs were the cause of a high burden of injury. This is not surprising because these statistics actually do not seem to exist. Namibia produced a *Disability Report* in 2016, based on data from the National Census of 2011. According to this report, there were 98 413 people living with disabilities in Namibia, with the majority (18%) having impairment of the lower limbs and 10% with impairment of the upper limbs [25]. This report collects a wide range of data related to people living with disabilities, including a number of demographic details as well as household and social characteristics, but it does not contain any information about the cause of disability. For example, there is no information in the report that identifies if a person is unable to use his or her lower limbs because of a fall or an RTI. If there was evidence to show that a significant number of people are sustaining, severe life changing injuries such as paralysis due to RTIs, policymakers would be more likely to take note of the problem and to implement measures to try to reduce them.

To our knowledge, this is the first study of its kind in Namibia and we believe it provides important information to policy makers and public health professionals regarding ways to enhance a multi-sectoral public health approach to RTIs. These results show that HCWs in Namibia are very knowledgeable about RTIs, their risk factors, the related socio-economic issues, and the broader problems linked with road safety in Namibia. As first contact carers for RTI survivors, the knowledge they have could play a critical role in informing policy and intervention efforts. Their lack of involvement in road safety efforts or in the formulation of strategies to enhance the lives of RTI survivors represents a lost opportunity. According to [7], road safety is best achieved when

all key groups of service providers linked to the scientific groups noted in section “Introduction” – including HCWs – work in unison. As the WHO notes, the health sector has important roles to play in road safety. These include injury surveillance and surveys to determine the magnitude, scope, characteristics, and consequences of RTIs, which can provide input on human behaviour to policy makers to help craft effective intervention measures. Examples of this could be HCWs being encouraged to collate long-term surveillance data on the injured as well as being given incentives to carry out more research on RTIs and on the efficacy of RTI safety campaigns in Namibia. Their expertise can also be called upon for public health campaigns for the general public as well as giving evidence to politicians about the tremendous and potentially preventable costs in human and financial terms. In short, HCWs have a significant role to play in persuading politicians, policy-makers as well as the general public, of the necessity to address RTIs as a major issue of national concern, and of the importance of adopting improved approaches to road danger reduction [7]. The involvement of HCWs in road safety as part of a cross-sectoral collaboration is also essential in order for the adoption of a coordinated multi-sectoral approach to road safety.

Strengths and limitations

A major strength of this study is that to the best of our knowledge, this study is the first of its kind in Namibia and thus adds to the knowledge of RTIs in the country. As such it can also provide reference for future related studies in Namibia and also in other LMICs countries in which no such research has been previously done. A limitation to this research is the relatively small sample size of 20 participants. Although such a sample size is not unusual for qualitative studies, it is not possible to generalise for the HCWs providing care and support for RTI victims who were not sampled. However, it must also be noted that Namibia has a small workforce of health professionals such as occupational therapists and physiotherapists, thus we also believe we interviewed a significant number of the total work force knowledgeable about these issues in Namibia.

Conclusions

The findings of this study show that Namibian HCWs are knowledgeable about RTIs and the related burden of injury, risk factors, long-term socio-economic impacts, and problems with road safety in Namibia, including the lack of a coordinated multi-sectoral approach and lack of investment in road safety. It also shows that whilst often very involved with care, HCWs are rarely or never consulted by the Namibian government or ministries that deal with road safety and related matters. From these findings and from what is known from literature, we can conclude that their lack of involvement in local and national road safety efforts represents a lost opportunity. The Namibian government should draw upon their expertise. Examples of this could be HCWs being encouraged to collate long-term surveillance data on the injured as well as HCWs being given incentives to carry out more research on RTIs in Namibia. Statistics on the causes of disability in Namibia are currently lacking and the NSA should be lobbied to start collating this information, disability reports with particular attention to disability caused by RTIs would also help expand the insight and understanding of how RTIs are affecting health and well-being across the country. There already exists a large and well documented body of research and policy on ways of preventing RTIs based on long-established public health road safety

measures already implemented in dozens of higher income countries. In Namibia, cross-disciplinary collaboration with regular involvement by HCWs would help raise awareness amongst policymakers, government, the media, and the general public. It will lead to increased investment in road safety and increase public compliance with road safety measure as well as improved services and supports for those who have been injured and disabled in RTIs.

Disclosure statement

No potential conflict of interest was reported by the author(s).

References

- [1] World Health Organisation. WHO global status report on road safety 2013: supporting a decade of action; 2013; [cited 2019 Oct 12]. Available from: http://www.who.int/violence_injury_prevention/publications/road_traffic/en/
- [2] World Bank. Transport for health: the global burden of disease from motorized road transport. Washington (DC): World Bank Group; 2014; [cited 2020 Mar 10]. Available from: <http://documents.worldbank.org/curated/en/2014/01/19308007/transport-health-global-burden-disease-motorized-road-transport>
- [3] Hyder AA, Labinjo M, Muzaffar SS. A new challenge to child and adolescent survival in urban Africa: an increasing burden of road traffic injuries. *Traffic Inj Prev.* 2006;7(4):381–388.
- [4] Peden M. Global collaboration on road traffic injury prevention. *Int J Inj Control Saf Promot.* 2005;12(2):85–91.
- [5] Sharma BR. Road traffic injuries: a major global public health crisis. *Public Health.* 2008;122(12):1399–1406.
- [6] Forjuoh SN. Traffic-related injury prevention interventions for low-income countries. *Inj Control Saf Promot.* 2003;10(1–2):109–118.
- [7] World Health Organisation. World report on road traffic injury prevention; 2004; [cited 2019 Oct 14]. Available from: http://www.who.int/violence_injury_prevention/publications/road_traffic/en/
- [8] Chen G. Road traffic safety in African countries – status, trend, contributing factors, countermeasures and challenges. *Int J Inj Control Saf Promot.* 2010;17(4):247–255.
- [9] Bachani AM, Koradia P, Herbert HK, et al. Road traffic injuries in Kenya: the health burden and risk factors in two districts. *Traffic Inj Prev.* 2012;13(Suppl. 1):24–30.
- [10] Hassen A, Godesso A, Abebe L, et al. Risky driving behaviors for road traffic accident among drivers in Mekele city, Northern Ethiopia. *BMC Res Notes.* 2011;4:535.
- [11] Nakale A. Majority of disabled kids never attended ECD; 2017; [cited 2020 Jan 18]. Available from: <https://www.new-era.com.na/2017/08/09/majority-of-disabled-kids-never-attended-ecd/>
- [12] African Development Bank. Mortality in Africa: the share of road traffic fatalities; 2013; [cited 2019 Mar 15]. Available from: <http://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/Economic%20Brief%20-%20Mortality%20in%20Africa%20-%20The%20Share%20of%20Road%20Traffic%20Fatalities.pdf>
- [13] Namibia Statistics Agency. Namibia social statistics December 2014 report; 2015; [cited 2019 Mar 19]. Available from: <http://nsa.org.na/page/publications/>
- [14] World Health Organization. Global status report on road safety 2018; 2018; [cited 2019 Jan 22]. Available from: https://www.who.int/violence_injury_prevention/road_safety_status/2018/en/
- [15] Heidersbach F, Strompen F. 2013. Sustainable urban transport master plan for Windhoek including Rehoboth, Okahandja and Hosea Kutako International Airport; [cited 2020 Jul 13]. Available from: http://www.movewindhoek.com.na/sites/default/files/sutmp_final_main_report_2013_v1.pdf
- [16] Kashona P, Pazvakawambwa L. Statistical analysis of traffic offences around the city of Windhoek: a management perspective. *J Econ Int Business Manag.* 2014;2(2):36–41.
- [17] National Road Safety Council. Road accidents in Namibia: statistical report 2009; 2013; [cited 2019 Oct 11]. Available from: <http://www.nrsc.org.na/files/downloads/National%20Road%20Statistical%20Report%20-%20Road%20accidents%20inNamibia.pdf>
- [18] Informante. Developing Namibia's transport sector; 2014; [cited 2018 May 9]. Available from: <http://www.informante.web.na/sites/default/files/ministry%20of%20works.pdf>
- [19] National Road Safety Council. Post-conference press release: key conference resolutions; 2015; [cited 2018 Jan 15]. Available from: http://www.nrsc.org.na/files/downloads/dc3_Press%20Release%20-%20Post%20Conference.pdf
- [20] Nhongo R. National Road Safety Council outlines festive season safety plans; 2016; [cited 2019 May 10]. Available from: <https://www.observer.com.na/index.php/component/content/article/9-business/7404-national-road-safety-council-outlines-festive-season-safety-plans>
- [21] Brandt E. 20 percent budget cut won't deter roads authority; 2017; [cited 2019 Sep 3]. Available from: <https://newerlive.na/posts/20-percent-budget-cut-wont-deter-roads-authority>
- [22] Motor Vehicle Accident Fund. MVA benefits; 2018; [cited 2020 May 2]. Available from: <https://www.gov.na/documents/10181/.../10d3e7f8-9d98-4ac2-9ea8-67de2c4a4b49>
- [23] Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol.* 2006;3(2):77–101.
- [24] Maguire M, Delahunt B. Doing a thematic analysis: a practical, step-by-step guide for learning and teaching scholars. *AISHE-J.* 2017;8(3):3351–33514.
- [25] Namibia Statistics Agency. Namibia 2011 census disability report; 2016; [cited 2020 Jun 14]. Available from: https://cms.my.na/assets/documents/Namibia_2011_Disability_Report.pdf
- [26] Belin MA, Tillgren P, Vedung E. Vision zero – a road safety policy innovation. *Int J Inj Control Saf Promot.* 2012;19(2):171–179.