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A qualitative approach to the intangible cost of road traffic injuries

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The consequences of fatal and non-fatal road traffic injuries (RTI) at the personal and household levels were analysed using qualitative interviews of 12 injured and of 12 relatives of people who died for this reason. Collisions change physical and mental health both of the injured and of their relatives. This leads to changes in daily activities and even to the redefinition of future life. RTI also changes the way people see and act in life, becoming an experience that teaches them. Survivors commonly transmit a road safety message afterwards. Changes in family life were evident (in extreme cases family's composition also changed), affecting intra-familial relationships. Associated unexpected and unplanned expenditures and loss of income have consequences in the short, medium and long term that unbalance household's economies and immerse people into a constant stress. Individuals and family's future plans are occasionally condition to whether they have or not debts. Household dependence in economic terms was sometimes observed, as well as uncertainty about future life and household's sustainability. Sometimes, households change and adapt their life to what they now are able to afford, having important repercussions in vital spheres.

Keywords: intangible cost; road traffic injuries; qualitative approach

Introduction

The economic impact of road traffic injuries (RTI) is high and its effect on families is disastrous (European Transport Safety Council, 2007; Pérez-Núñez et al., 2011). However, monetary costs represent just one consequence of RTI. Injured people commonly suffer physical pain and emotional distress, permanent disability, loss of mobility or vision and severe brain injury. These conditions are not remedied monetarily and can profoundly limit people's lives and lead to greater dependence on others to perform daily activities (Blincoe et al., 2002; Rodríguez, 2005).

Family and friends of victims also feel and suffer the psychological impact of RTI. Taking care of an injured family member can be very demanding, and it may result in economic and emotional losses for everyone involved. Such an event can change the very nature of family life, its cohesion, and relations can be similarly affected (Blincoe, et al., 2002; Nigenda, López-Ortega, Matarazzo, & Juárez-Ramírez, 2007). But when an injured person dies, the emotional damage is even greater; it may affect family and friends for many years after the event (Lehman, Wortman, & Williams, 1987; Nigenda et al., 2007).

Merlevede emphasises the traumatic element of these types of deaths and concludes that being confronted with a death of this cause is related to increased psychological problems of the relatives who have lost a loved one, even after adjusting by the quality of the relationship, previous physical and psychological comfort (Merlevede et al., 2004). This means that years later, many of the bereaved may still struggle to make sense of the loss (Lehman et al., 1987).

All these consequences are difficult if not impossible to be measured and thus assigning them a monetary value is even more questionable. However, this cost referred to as ''social pain'' (Rodríguez, 2005), ''human cost'' (Transport Research Laboratory, 2003), ''cost of pain, grief and suffering'' (De León, Cal, & Sigua, 2005), ''non-monetary cost'' or ''intangible cost'' (Butchart et al., 2008) could be documented through a qualitative approach. Giving voice to people affected by RTI or to the relatives of people who died as a result of RTI is the best way to learn as much as possible about their experience in non-quantifiable dimensions; in this way, informants offer ''a greater opportunity to learn'' (Rodríguez-Gómez & Gil-Flores, 1999).

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The aim of this study was to recover the experience of people injured in traffic events and of relatives of people who died from this cause, and to document the intangible cost using a qualitative approach recording the information from their own perspective and subjectivity. Based on the assumption that the intangible cost related to RTI transcends physical consequences and affects a large number of areas of people's lives, the rationale behind the study was to gain an in-depth understanding of the essence of the experience of those who experienced RTI firsthand. More specifically, we were interested in exploring in which parts of daily life we could find the main intangible costs of RTI; what strategies do people use to face them; and how does this cost affects persons with different roles inside the household?

Material and methods

A qualitative approach was used to explore the intangible cost of RTI from a phenomenology framework. Phenomenology translates the human experience as it was consciously experienced into language, without theories about causal explanation and as free as possible from unexamined preconceptions and previous assumptions, in the belief that essential truths about reality are rooted in lived experience (Moustakas, 1994; Speziale & Carpenter, 2003). In this context, the viewpoint of persons who experienced RTI helps researchers understand people and human life so that they can work effectively with them (Becker, 1992).

Selection of research subjects

Subjects for this study were chosen from residents of the Guadalajara metropolitan area (GMA), Mexico who had suffered RTI from one to three months prior to the interview, or relatives of people who died as a result of RTI. All subjects were 18-years old or older and were either pedestrians or car occupants (road users most commonly affected in Mexico). We took into account the following profile as a criterion for inclusion (Rice & Ezzy, 2001):

(1) subjects who suffered RTI who had any permanent result, or
(2) subjects who suffered RTI that required at least two months of treatment and healing, or
(3) relatives of a person who was killed in a collision and who was living in the same house as the victim.

Since people have different roles within the family and their injury or death has different implications, it was of particular interest to include heads of households as well as any other family members.[1] We defined *a priori* a number of 24 interviews, 12 heads of household and 12 non-heads of household, since the latter subject has not been fully studied in the past (Rodríguez-Gómez, Gil-Flores, & García-Jiménez, 1999). From them, 12 were injured but survived, and 12 were relatives of people who died of this cause. The characteristics of participating subjects are presented in Table 1. People were approached directly in hospitals and public and private rehabilitation units. In addition, a snowball strategy was followed (Rice & Ezzy, 2001) to identify relatives of those who perished.

Gathering the information technique

Semi-structured interviews were carried out between November 2007 and January 2008. Interviews were based on a guide designed to explore the impact and consequences of RTI. After the reconstruction of the event, all interviewees were asked 'How this *accident* has affected you or your family?' as well as 'What consequences has the *accident* had on you and/or your life?' The purpose of such questions was to gain insights about the most meaningful experiences to the participants themselves. When needed, participants were encouraged to elaborate more on their experiences using prompts such as 'In what other way has the *accident* affected you?' or 'How does that make you (or your family) feel?' Consequences were classified under the following areas of interest: health, personal and family life, and household effects associated with monetary costs.

Ethical considerations

This project was approved by the IRB of the National Institute of Public Health. When first contacted, all participants were asked for their informed consent orally, and when the time pre-established after the first contact (1–3 months) had passed they were asked to sign a consent form.[2] Interviews were conducted at the informants' homes, except in a few cases in which participants preferred to be interviewed at the University of Guadalajara facilities. Given the sensitivity of the issues addressed, psychological support was available during all interviews; moreover, if people interviewed considered it necessary, they were referred to qualified personnel to receive further psychological treatment.

Information analysis

A diary of field work was carefully kept. The features of the context, nonverbal expressions of communication, subjective judgements about the informant, the

Table 1. Criteria to select subjects for qualitative interviews and characteristics of informants.

	Deaths				Non-fatal injuries	
	Head of household		Non-head of household			
	Injured characteristics	Informant	Injured characteristics	Informant	Head of household	Non-head of household
Road users						
Pedestrian	M-89a, Non-insured, Married, with 1 dependent (wife)	Daughter	M-57a, Non-insured, Single, without dependents	Brother	M-42a, Non-insured, Single, without dependents	M-18a, Non-insured, Single, without dependents
	M-87a, Non-insured, Married, with 2 dependents (wife and Son EA of 32a)	Son	F-50a, Non-insured, Married, without dependents	Son	M-38a, Non-insured, Married, with 1 dependent (wife EA)	F-48a, Non-insured, Married with 2 dependents (children <10a)
	M-68a, Non-insured, Married, with 2 dependents (wife and Son EA of 22a)	Wife	M-11a, Non-insured	Mother	M-69a, Non-insured, Married, with 1 dependent (wife EA)	M-33a, Non-insured, Separated, with 4 dependents (exwife and children underage)
Car occupant	M-24a, Non-insured, Married, with 5 dependents (wife and 4 children <8a)	Mother	M-23a, Non-insured, Married, with 2 dependents (wife and daughter of 1a)	Mother	M-34a, Non-insured, Single, without dependents	F-51a, Insured IMSS, Married, without dependents
	M-41a, Non-insured, Separated, with 3 dependents (children of 12a, 15a and 19a EA)	Daughter	F-27a, Insured IMSS, Married, with 1 dependent (son of 7a)	Aunt	M-40-45a, Insured IMSS, Married, with 4 dependents (wife EA children of 11a, 13a and 15a)	M-35a, Insured IMSS, separated, with 2 dependents (exwife EA and daughter of 6a)
	M-39a, Non-insured, Married, with 5 dependents (wife and children of 4a, 7a, 13a, y 16a)	Wife	M-21a, Insured IMSS, Single, without dependents	Father	M-42a, Insured MSS, Married, with 3 dependents (wife and children of 13a and 18a)	F-57a, Non-insured, Married, without dependents

Abbreviations M: Masculine; F: Feminine; a: age in year; EA: economically active; IMSS: Mexican Social Security Institute.
Marital Status: Married (or with civil partner), Single and Separated (Divorced/dissolved partnership). Dependents: individuals that depend (depended) economically on injured.

informants' experience, and the interview itself were registered immediately after the interviews. These notes were integrated into the analysis to have a broader understanding of the experiences reported. The interviews were recorded and later transcribed for analysis using the ATLAS-TI 5.2® program (Muhr, 1998). From a critical perspective, discourse analysis of the evidence obtained was conducted. We considered that discourse is a practice which not only reflects or represents social entities and relations, but also builds them up (Fairclough, 1992). Thus, for the analysis, the categories of interest were defined and the information was classified accordingly.

Results

Results are presented by analytical categories. Figure 1 shows the consequences of RTI in the four areas described below as well as relationships between analytical categories.

Health Consequences

The process of recovery is often a long and uncomfortable process for people who survive from injury. It was not uncommon to observe feelings of frustration, despair, and powerlessness associated to being unable to carry out their lives as they used to before the collision among participants. The change in health status is a factor that affects the personal life.

One of the main consequences of RTI is the temporary or permanent dependence of an injured person upon a caregiver. Having to depend on others to perform the activities of daily life generates frustration and a feeling of helplessness. It is also an experience that often produces pain, embarrassment and even anger when basic tasks such as eating, performing personal hygiene and care of physiological needs are compromised. Greater dependence can also stress relations within the family, causing disputes and anger among those who should assume the role of caregiver. However, we also identified a positive aspect

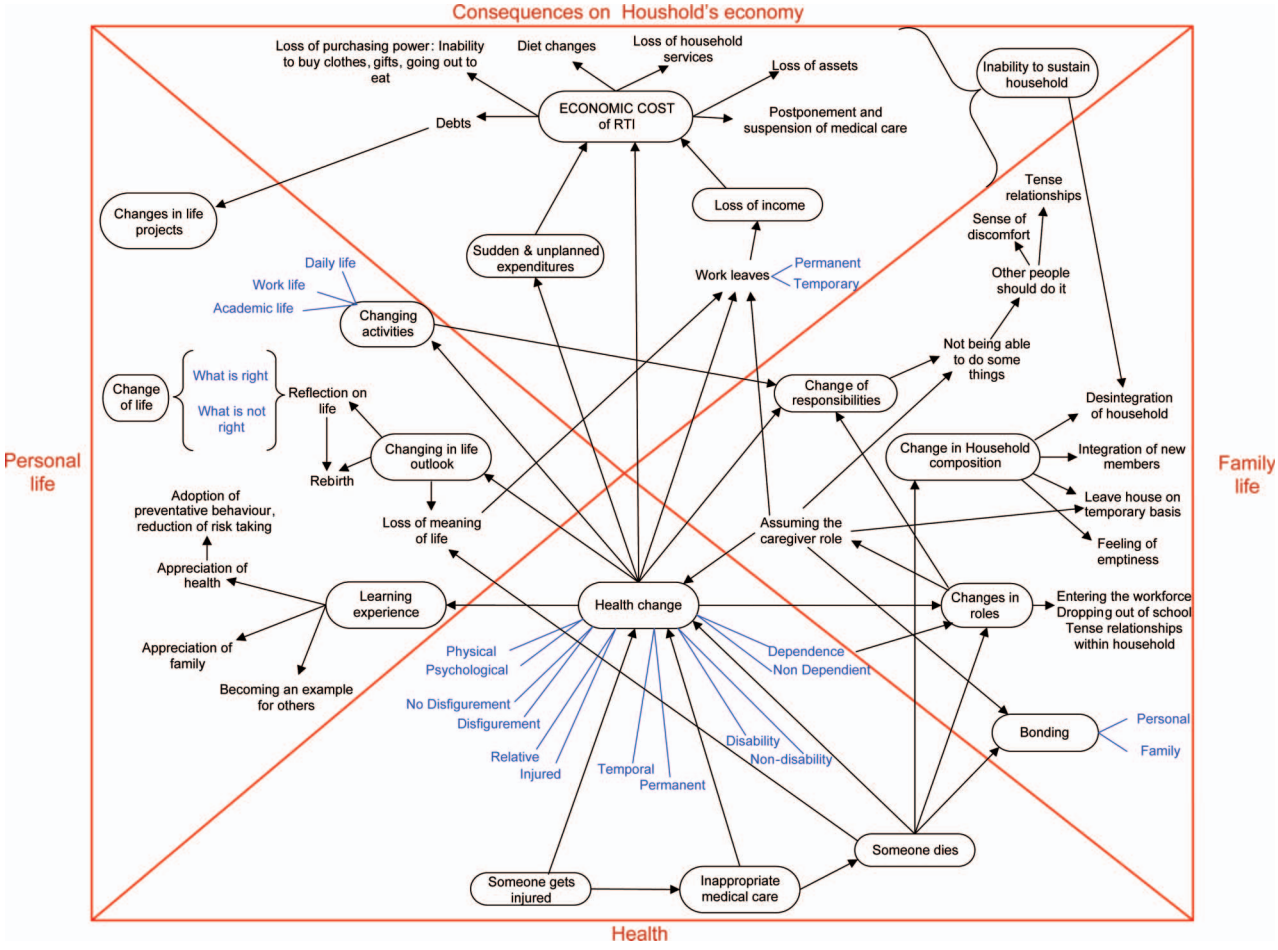

Figure 1. Experience of having RTI from the perspective of injured and relatives of people that died for this reason, GMA 2008–2009.

associated with receiving care and relying on other people. Injured people feel valued and supported, pampered and flattered to receive tokens of affection in the form of care and attention. This motivates the injured to accelerate their recovery, highlighting the importance of having family and social networks of support, especially when these are close relationships that give confidence to the injured.

Testimonies repeatedly stressed the important role played by family members during hospitalisation. They participate actively in the care of injured people; in their absence, important complications and even death can occur. When relatives did not have the opportunity to intervene in the care of their deceased relatives, this often leads to feelings of helplessness, frustration and regret. The reports on shortage of medicines and lack of medical equipment and the limited availability of staff for more personalised attention in places where the injured were treated were so frequent that it seems to show that health outcome depends largely on the ability or inability of the injured themselves and their families to get money, caregivers and/or medical supplies.

Family members also reported changes in their health during the care of injured people. Caregivers place the needs of the injured before their own at the expense of their own health. Being a caregiver involves, in most cases, emotional and physical stress that is not easily overcome. In some cases, it is required to go from one city to another to take care of their family, and they practically abandon their own personal life to take care of the injured all the time. Also, relatives are forced to make vital decisions related to the life of the injured, and they feel unprepared for that; sometimes, this situation will generate remorse of conscience. When the injured survives, the caregiver feels that the effort ''was worth it,'' but when the patient dies, the experience is devastating for the family. Taking care of a relative may also be a motivating experience for caregivers, which make them forget their own problems as they feel ''useful.''

The mental health of those who have survived a RTI is also affected. After such events, people interviewed reported sometimes experiencing extreme and uncontrollable fear, and in some extreme cases, they experienced paralysing fear. Extreme and uncontrollable fear alters the perception of everyday life, but it is controllable and manageable and does not limit the functionality of the person. Meanwhile, paralysing fear is unmanageable, and it prevents people from performing their daily activities as they used to.

In dealing with death, family members repeatedly mention feelings of sadness and pain. Some informants referred to repressing their feelings and emotions to be supportive for other family members who seemed to be more affected or who they perceived as being more vulnerable. Sometimes, people reported feeling desperate about the extent to which their life changed from one moment to another. These feelings sometimes make people lose the meaning of life that, in the extreme, leads to the search for professional medical treatment and may also affect their daily activities.

Consequences on personal life

According to informants, life changes after a collision. On the one hand, permanent physical injury forced people to rethink their daily activities and, in particular, their working lives. On the other hand, there were injured people who lost full school cycles, which affected their future plans. RTI and their consequences seem to definitively affect the lives of those directly and indirectly involved. After an experience like this, people reflect on their lives and sometimes thought about making major changes in response to what they perceived was ''not right'' on how they saw life before the event. Some perceive themselves as someone completely different and spoke of being ''another person'' and ''have been reborn'' after their experience; this perception was common among respondents. Similarly, some respondents were surprised to see how other family members changed their behaviours, for example, they became more talkative and expressed their feelings, which they did not use to do. Others after being used to depend on people who died for this reason, started to assume more responsibilities and engaged in activities that they did not use to do when the deceased were alive.

Living an event like this, directly or indirectly, is an experience that teaches different lessons. People experience firsthand the fragility of the human condition, which teaches them to value their body, their health and their life more. The survivors take on a role more committed to road safety and transmit this message to their social and family networks with the intention that others should not go through what they lived. Thus, changes in one's personal life, work life, and the very way one sees life makes the experience ''worth it,'' as they said.

Consequences on family life

RTI change family life and dynamics. The changes range from the reorganisation of domestic activities to profound changes in the roles and responsibilities that different members within the family. This can sometimes lead to discontent among those who have to take on new responsibilities and stress relations within the family. It also complicates the lives of those living in

single families as no one else can replace them, which ultimately affects them the most. The changes experienced even threaten other family members, which is especially evident when housewives have to assume the role of caregiver and minors who depend on them are affected in terms of nourishment and care, among other things.

The change of roles within the family happens mostly when the person who is injured, or who died is the head of household and the principal provider. In his absence, someone else must take this role, which can be temporarily, in the case of recovery, or permanent, when they die. This presents a great challenge for the new head of household, because people are not always prepared for what this implies, either because they did not work outside the house or because their wages are insufficient for all the financial needs of the family. But even if the injured person is not the head of household, all costs associated, especially those related to health care, encourage some members of the family to start working.

When a family member dies, the composition of the family is also affected because it leaves an irreplaceable space in the family. Some people feel lonely, even abandoned by the deceased. At its extreme, the absence of a member resulted in the disintegration of family units since this event exacerbated existing problems especially when there was property in dispute due to inheritance. For other families, however, an experience such as this becomes another reason to tie family bonds tighter. The composition of the family is also affected when family members who did not live within the family originally integrate into it as visitors or aiding with care and support for the injured person. Finally, people experience uncertainty about their future, because they cannot see clearly how long their families are able to ''survive'' the financial crises.

Household effects associated to the monetary cost

RTI are characterised by being a sudden event that takes people by surprise, especially financially. RTI have a high associated economic cost, which goes from spending on medical care to the loss of income resulting from death or temporary or permanent incapacity. Table 2 summarises, in a simplified way, the main outcomes that emerged from the testimony of informants. Many low-income families become concerned almost immediately after a collision because they do not have money available to cover medical care and are forced to ask their extended family and social networks for financial support to ease the economic burden that RTI impose. An event like this further destabilises a family's economy and submits people to a constant stress. Furthermore, sometimes people cannot get money easily and they are forced to postpone or delay certain treatments necessary for a better and faster recovery. This makes them feel sad, frustrated and helpless.

Something similar happens when people die. To bury a family member is painful, yet important for the family. Not having money to do so is a very frustrating situation that makes the experience even more painful. Respondents said they had not been prepared to meet the cost of funeral services. However, in every case, they tried to find alternatives to arrange the most ''honourable farewell'' possible. When their economic shortages did not allow them to do it the way they would have liked, they were suddenly confronted with a great amount of stress.

Household income decreases temporarily or permanently when people are forced to stop working. When economically active people die, household incomes are permanently impoverished, and when this person was the head of household or the principal provider, the implications of this event within the family can be dramatic. This was the case when the head of household cannot be replaced, and the rest of the family depends economically on others producing uncertainty about their future sustainability. At its extreme, this situation can provoke the disintegration of the family.

In the short to medium term, the costs associated with injuries can affect even the basic needs of family members. When the relatives of those who die as a result of RTI see their resources depleted, they have to adapt to what is now affordable; this sometimes affects even the bare necessities, such as food.

Families invariably lose part of their wealth. At first, the car owners damage a piece of property, which, in many cases, represents six or 12 months of savings to be able to buy it. When they are not insured, as it was frequently observed, this means losing the vehicle completely and having to start again. Some families put off basic services temporarily such as electricity or gas due to the lack of resources to meet the payments. Apart from these situations that surely impact the welfare of individuals and their families in the short term, they must also contend with situations that impact them in the long term such as school dropout.

At the time of the interview several families were still in debt and worried about having to pay it off, even though in most cases, RTI had occurred almost three months earlier. Thus, respondent's future plans were contingent upon whether or not they had debts. Having to pay those debts not only stressed and concerned the injured survivors or relatives of those who had died, but it also became a life goal in the medium and long term, which replaced or prevailed over previous personal's plans and life projects.

Table 2. Household effects associated to the monetary cost of RTI, GMA 2008–2009.

Temporality		
Short term	Medium term	Long term
Lack of money (and/or expenditures associated to RTI) make injured people unable to buy medicines and medical equipment to support their recovery		
The sudden and unexpected death due to RTI and medical expenditure associated leave households without money to bury injured people that die, activity highly valued and appreciated by interviewed		
More domestic help hired during recovery, since ''there is more work to do''		
Families change even their eating habits when they have debts as result of medical attention to injured and need to pay soon		
Households lose services such as liquified gas and electricity due to the lack of resources to pay them		
Injured people and some of their relatives stop working and thus lose earnings. The could be for a few days or even months (as result of being injured, taking care of an injured person and/or from the emotional impact of RTI)		
Role change: when the head of household dies, somebody else has to assume the role what implies more responsibilities in the short, medium and long term (feelings of insecurity, nervousness)		
Loss of capital has externalities on work activities: there is no money to fix a car used to work, which translates in to less income due to the lack of proper equipment to work		
Loss of a provider that could be the principal provider when the person who dies is the head of household.		
Loss of personal and household's patrimony, such as cars (people who had car insurance do not receive enough money to buy a similar car, those without car insurance loss everything sometimes this implies 6 months-1 year of savings), assets and personal belongings		
Without money children could not be registered at kindergarten since these services are not always available on a free of charge basis. Other persons quit their studies since there were not enough finances for their future, as a result, they start working.		
	The associated cost of injuries and/or subsistence while recovering after hospital discharge consume valuable resources (for example savings) that had other purposes such as increasing the individual/ household patrimony (buying a car house repairments, between other)	
	Domestic employees become a luxury for some households, as a result they find their roles change inside households, more responsibilities for each member	
	Sacrifice of not buying presents, new clothes and shoes for children as a result of lack of money (in the context of Christmas time)	
	Cancellation of family trips	
	Lendings that even 1–3 months after the RTI some households are still paying	
	Sacrifice of ''luxuries'' and pleasures: going out to eat, buying new clothes, buying brand products	
	Some people need to start working to increase the household's income.	
	Temporal dependence and future uncertainty (social vulnerability). Sometimes people do not have clarity as to what extent and until when would they receive the family support.	

Various strategies to address the economic cost associated with RTI were identified. Table 3 lists the strategies outlined in the discourse of the informants, which can be classified into five major categories: foresights, lendings, selling, pawning, donations and restraining of expenditure. Table 3 also identifies key actors who supported injured persons and their families helping them to cope with the economic costs.

Even though receiving money from those responsible for the collision was not a common practice, whenever it happened, the injured and especially the relatives of those who died, tended to experience contradictory feelings about it. On the one hand,

Table 3. Strategies to cope with the monetary cost of RTI, GMA 2008–2009.

		Stretegies	Key actors identified
Foresights		Use of savings	
		Medical Insurance (specifically for direct medical cost)	
		Car insurance	
Lendings		Borrowing money formally. It normally implies the payment of the interests generated.	Moneylender
	*	Somebody lends them money informally, normally without paying interests.	Family and close friends, employers
		Taking temporarily gross sales	
Selling-pawning		Pawning and selling personal values, properties and household goods	
Donations	*	Somebody else pays something or give money without expecting repayment or receiving anything in return	Employers, relatives, close friends, members of same religion groups, members of a cooperative
		Continuation of work benefits even in sick leaves	Employers
	*	To ask even to beg for money (having a money collection)	Friends that have a money collection and donate the money
		Payments and legal economic compensations of ''responsibles'' or legal guilty	Responsibles
		In-kind donations: food, allowance, wheelchairs	Humanitarian groups from Hospital Civil, DIF
		Discounts in medical studies and hospitalization costs	Social workers from the hospital
	+	Incorporation to medical research protocols	Medical doctors, institutions
Restraining of expenditure		Reducation of expenditure in non vital necessities, such as: going out to eat, domestic employees, electricity, liquified gas to cook, school	
		Reduction expenditures in vital necessities: food	
		Search of cheaper options on the black markets (medicines)	
		Cremation instead of burial, since ''it is cheaper''	

*It is not clear whether this categories are perceived by respondents as lendings in traditional surveys documenting the economic cost from a quantitive perspective.

+Non-voluntary and citcumstantial strategy.

Abbrevations. DIF: System of integral Development of the Family (Social Assistance).

knowing that the money could not replace the loss of health or a loved one made them reluctant to accept money. But on the other hand, the suddenness of this event, the economic hardship, and the need to give an ''honorable farewell'' to their deceased relatives compelled them to accept it or to seek compensation legally. Either way, to be forced to ''borrow money'' from those identified as responsible for injury or death of a relative was an annoying and even humiliating experience.

Discussion

Knowing the intangible cost of RTI is important in terms of health policy and scientific knowledge (Institute for Road Safety Research, 2007). Testimonies documented in this paper uncover a whole world of experiences, trials, problems, and difficulties that lie hidden behind injury statistics; they also give meaning and put the figures clearly documented as monetary cost into context. Even though some recent efforts have sought to give a ''face'' to the numbers, documenting the stories of people who have died or have lost some of their abilities as a result of RTI (Centro Nacional para la Prevención de Accidentes, 2008; World Health Organization, 2007), the focus of this work allowed us to systematically explore the impact of RTI in different areas of life.

An example of this was to document how differences in people's health outcomes depended on whether individuals had or were able to get money, supplies and/or special equipment on time, which has major implications for a health system intended to equitable answer to the health needs of the population. This is, or at least should be, one of the intrinsic goals of any health system (OMS, 2000). However, it seems

that this is not happening in all the cases. It was important therefore to document the strategies that families use to cope with the cost and medium and long term consequences observed in terms of property loss, delay and/or cancellation of medical treatment, school dropout and dietary changes; this was the case even for people who had health insurance and when car insurance companies were involved. It seems that injured people are still socially vulnerable to these events and its consequences despite the fact that the recent Mexican health care reform has made great advances in terms of effectively covering its population in key health areas (Lozano et al., 2006) and has reduced out-of-pocket health expenditures and their negative effects (Knaul et al., 2006). And yet a recent study documented that a high proportion of injured persons incurred catastrophic expenditures in the same context even when they were insured (Pérez-Núñez et al., 2011). This could be due to the fact that health insurance does not cover high cost and/or long-term interventions required by injured people. In addition, there is low regulation of private car insurance companies that have great incentives to avoid making payments when they could be averted to the detriment of the poor people who tend to not have car and/or health insurances. Overall, these findings call urgent attention to the need to implement social strategies to protect individuals and their families. Legal compensations, for example, have been reported as helpful in assisting injured people in their costs and on injury recovery although the process sometimes could be stressful and thus subjected to policy review or legislative change (Murgatroyd, Cameron, & Harris, 2010).

Results presented here are in line with those documented by Nigenda and collaborators, who observed the care of those chronically ill and disabled implies almost a total commitment by a caregiver during the time in which the relative remains in that condition. This forces relatives to completely restructure their daily activities in order to care for an injured person who requires permanent monitoring (Nigenda et al., 2007). This study documented the implications of this activity in terms of lost income resulting from the need to stop working, or the reduction of leisure time due to the increased tasks involved in caring for an injured individual; all of this can strain family relations and generate anger among those involved. Also, being worn out has a negative impact on the physical and emotional health of caregivers, which tends to be even greater when there is not a broad network of social support that can take care of the patient while the principal caregiver is away (Nigenda et al., 2007). However, being taken care of was highly valued by injured people, as recently reported by other authors (Murgatroyd et al., 2010).

According to this analysis, the relatives of people who suffered an RTI were also significantly affected and showed changes that are consistent with previous studies (Cleiren, Grad, Zavasnik, & Diekstra, 1996; European Transport Safety Council, 2007; Lehman et al., 1987; Mayou, Bryant, & Duthie, 1993; Nigenda et al., 2007). One study documented that 90% of the relatives of people fatally injured and 85% of relatives of people who were disabled by RTI, showed a permanent decrease in their quality of life or standard of living, which for 50% of them was considered dramatic (European Transport Safety Council, 2007).

Findings presented here are in agreement with those documented by Lehman and colleagues who also showed a decline in the income of individuals four to seven years after they had lost a relative as a result of RTI. Also, those who have lost a child in a sudden event, such as RTI, change work frequently and experience more job insecurity than those who have not had this experience. These findings highlight the longer-term effects of RTI on this population even in countries with higher income and better social protection systems (Lehman et al., 1987). Similarly, it shows how this affects not only paid employment: housewives also reported being less able and willing to do housework, and feel angry about having to do it (Lehman et al., 1987). Reactions may depend largely on the sociocultural context in which the loss occurs, so it is worth examining the differences between different ways of dying from a transcultural perspective (Cleiren et al., 1996).

Evidence available suggests that grief is particularly likely to have a long lasting impact when death is sudden, unexpected and without warning. It has also been documented that lesser grief problems occurs among those who know, at least two weeks in advance, that the relative will die (Lehman et al., 1987). It has also been documented that other areas of social interaction are affected; i.e. personal relationships according to the context and the social environment. People spend less time with friends, have more open arguments with them, feel hurt or offended by them most commonly and, in general, they feel lonely and bored for much more of the time (Lehman et al., 1987). Thus, Merlevede has stressed the need to improve psychological care for relatives who have suffered the loss of a close relative, especially in connection with the communication of the incident and its consequences, for a better grief handling (European Transport Safety Council, 2007). However, few people mentioned having received professional help to cope with the loss of a relative, and it was evident that psychological help was not recognised as an effective option for dealing with the loss, except in cases in which mental state was perceived as interfering with daily activities.

This represents a window of opportunity to implement strategies, such as individual or family psychotherapy, to face these kinds of experiences.

Also, the anxiety of travel, both as a driver or passenger, has been documented among drivers and passengers of motor vehicles in previous studies which cite that this lasts for a period of five to six years after the injury (Mayou et al., 1993; Mayou, Simkin, & Threlfall, 1991). However, this study also documents how anxiety was also present in pedestrians. Although the conditions and psychiatric complications associated with persistent injuries is known, we highlight the need to be attentive to the possible psychological consequences of those suffering from minor injuries and even those who were not injured but had a collision. According to Mayou, most of those who reported problems after three months after the collision will continue experimenting problems a year after, highlighting the need for opportune psychological–psychiatric intervention (Mayou et al., 1993).

There are positive consequences of RTI that are worth mentioning. An interesting finding of this study was identifying changes in perceptions, attitudes and behaviour with regard to road safety, as well as personal reflections on the need to adopt safer behaviours when using public roads, in the discourse of informants. This is consistent with previous studies that have documented how driving behaviour changed significantly after a collision; these studies even consider that the time when RTI occur is a window of opportunity for improvement of driving security measures (Mayou et al., 1993). This opens an important opportunity for future studies directed at documenting how deep the changes in risky attitudes are and how long they last. Either way, the willingness showed by injured people and the families of those killed on the roads to change could pay a service in terms of road safety improvement. Their testimonies, apart from having a therapeutic effect and being an opportunity to express their fears of daily life and the uncertainties of the future (Híjar, Trostle, & Bronfman, 2003), allowed informants to recount their experience to others in order to prevent them from reliving what these events.

It can be concluded that RTI have important implications for health, personal life, family life and household economy; and that they affect how people see and act in their daily life. Most of these changes make no sense in purely monetary terms. It is impossible to try to assign a monetary value to the loss of the head of household, orphanhood, sadness resulting from losing a loved one and having to recover from this loss, the loss of the meaning of life, the disintegration of a family or their financial uncertainty. These experiences would become meaningless if they were expressed in monetary terms. This is important to keep in mind precisely because the RTI are the second leading cause of orphanhood in Mexico (Híjar, Vazquez-Vela, & Arreola-Risa, 2003). Giving them a monetary value would be a lost opportunity to learn from their experience and know more about RTI unexplored dimensions.

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Notes

1. For this purpose, the category of *head of household* was given to the person reported as such by the rest of the family.
2. Based on previous studies, it was considered that allowing this period of time was a pertinent measure directed to protect the emotional health of the people involved in the study.

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