ORIGINAL RESEARCH

The Socioeconomic consequences of femoral shaft fracture for patients in Malawi

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Abstract

Background

Femoral shaft fractures are common in Malawi, with an annual incidence of 44 per 100,000 people. Inadequate treatment and delayed presentation often result in functional, biopsychosocial, and financial challenges for patients. The purpose of this study was to examine the socioeconomic consequences of femoral shaft fractures for patients in Malawi.

Methods

This study of 42 patients was part of a larger study that prospectively examined quality of life. Questionnaires were distributed to patients at 1-year follow-up following femoral shaft fracture treatment. Patients reported pre- and post-injury standard of living and financial well-being.

Results

Patients reported relatively high transportation costs to and from the hospital. One year after injury, 17 patients (40%) had not returned to work. Of the 25 (60%) who had returned, 5 (20%) changed jobs due to their injury, all reported decreased productivity. Household income decreased for 29% of patients. 20 (49%) of 41 patients reported food insecurity in the week prior to questionnaire completion. Many patients reported changing their residence, borrowing money, selling personal property, and unenrolling children from school due to financial hardship caused by their injury.

Conclusion

While the Malawian public healthcare system is free at the point of care, it lacks the financial risk protection that is essential to universal health coverage (UHC). In this study, we found that the indirect costs of care due to femoral shaft fractures had substantial socioeconomic consequences on the majority of patients and their families. Increased investment of financial and human capital should be made into capacity building and preventative measures to decrease the burden of injury, increase access to care, improve care delivery, and provide financial risk protection for patients with traumatic injuries in Malawi

Key words: Socioeconomic; Femoral Shaft Fractures; Malawi

Introduction

The burden of trauma is increasing worldwide, particularly in low- and middle-income countries (LMICs) where the number of road traffic injuries (RTIs) continues to rise[1-9].

In fact, almost 90% of injury-related deaths worldwide occur in LMICs[8,10]. For many people in LMICs, access to appropriate care for injuries is limited, leading to long-term disability and worse quality of life[6,11]. Malawi is a low-income country in Sub-Saharan Africa with a population of 18 million people[5,12]. Malawi's public healthcare system consists of 4 urban central hospitals (CHs), 25 rural district hospitals (DHs), and hundreds of rural health centres[13]. At 35 deaths per 100,000 people, Malawi has the highest RTI mortality rate in Sub-Saharan Africa and one of the highest RTI mortality rates in the world, despite relatively few cars on the road[7,14]. RTIs are one of the leading causes of injury and injury-related deaths in the country. This results in a high burden of severe musculoskeletal injuries[14].

Femoral shaft fractures, often due to RTIs, represent a common musculoskeletal injury in Malawi, with an annual incidence of about 44 per 100,000 people. This equates to approximately one adult patient with femoral shaft fracture admitted per week to each DH and four patients per week to each CH[4]. While the gold standard treatment of femoral shaft fracture worldwide is surgical fixation with an intramedullary nail, this treatment is only feasible in Malawian CHs, where

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inadequate supply of implants, limited operating theatre (OT) time, lack of anesthesia staff, and insufficient surgical staff can limit its availability to all patients. Due to a lack of surgeons, inadequate surgical infrastructure, and limited resources, many femoral shaft fractures in Malawi are treated nonoperatively with skeletal traction, requiring prolonged hospitalization[5,11,16,17]. Unfortunately, no district or central hospital in Malawi has the minimum required resources to safely treat femoral shaft fractures and all hospitals reported some barriers to providing skeletal traction as a result of resource, staffing, and infrastructure limitations[5]. Inadequate treatment results in poor outcomes, high complication rates, long-term disability, and patient frustration with the quality of care[11,14,16,18]. This imposes considerable functional, biopsychosocial, and economic challenges upon patients with femoral shaft fractures.

While healthcare in Malawi is free for all citizens at the point of care, many Malawians lack access to timely and appropriate care. Thus, while direct costs of healthcare remain relatively low, the indirect costs of care can be catastrophic to patients and their families[5]. In fact, a recent study in Malawi by Chokotho, et. al. found that intramedullary nailing is not only more effective than skeletal traction for treatment of femoral shaft fracture, but also more cost-effective. Intramedullary nailing resulted in higher quality-adjusted life years (QALYs), lower cost to the patient by $880, and lower cost to society by $1,035 per patient[19]. The purpose of this study was to examine the individual patient-level social and economic consequences of femoral shaft fractures for patients receiving both operative and non-operative treatment in CHs in Malawi.

Methods

We have previously published the results of our prospective study that assessed quality of life and function in 187 adult patients with acute, traumatic femoral shaft fractures presenting to one of three district hospitals and two central hospitals in Malawi. Patients were treated with either intramedullary nail or skeletal traction depending on clinical reasoning and the availability of adequate resources and personnel. Intramedullary nailing was only available at the two central hospitals: Kamuzu Central Hospital (KCH) and Queen Elizabeth Central Hospital (QECH). Patients were enrolled at the time of hospital presentation, and prospectively followed for one year, during which quality of life and function were assessed at 6, 12, 24 and 52 weeks using the EQ-5D and short musculoskeletal function assessment (SMFA), respectively[20].

At the final one year follow up assessment, 42 patients agreed to complete an additional questionnaire regarding the social and economic consequences of their injury. Patients at Kamuzu Central Hospital (KCH) and Queen Elizabeth Central Hospital (QECH) – where both nonoperative and operative treatments were available – were invited to participate in this additional questionnaire. The questionnaire was adapted from the 2016 study by O'Hara et. al. examining economic loss due to traumatic injury in Uganda21; the Tool to Estimate Patients' Costs developed by the KNCV Tuberculosis Foundation, the World Health Organization, and the Japan Anti-Tuberculosis Association,22 piloted by Mauch et. al. in Kenya in 201123. Questions regarding work productivity were adapted from the Work Productivity and Activity Impairment instrument (WPAI)24. Questions regarding food insecurity were adapted from the Reduced Coping Strategies Index25. See Appendix 1 for the full questionnaire. Ethical approval to perform this study was given by the University of California San Francisco (UCSF) and the College of Medicine Research Ethics Committee (COMREC).

Data Collection & Analysis

We collected each patient's age, gender, hospital of treatment, and treatment modality. Patients were asked to quantify the costs of care related to transportation, loss of income, and decreased productivity for the patient and his/her family member(s) providing unpaid care. For transportation costs, patients reported the one-way cost of transportation to the hospital and money spent on food while on the road while waiting. The one-way transportation cost amount was subsequently doubled to estimate the total transportation costs to and from the hospital. This amount was then added to the amount of money spent on the road while waiting to ascertain the estimated total transportation costs associated with their care. Costs were reported in Malawi Kwacha (MWK) and converted to United States Dollars (USD) using the World Bank Purchasing Power Parity (PPP) conversion rate as of 2019 of 1 USD to 277.41 MWK. The PPP rate is a theoretical exchange rate that better accounts for differences in the price of goods in different countries[26].

At one-year follow-up, patients were asked whether or not they had returned to work and if so, whether they returned to their same pre-injury job. Patients reported injury effect on productivity (0 = no effect & 10 = completely prevented), and their pre- and post-injury income level (0-10,000 Kwacha/month; 10,001-20,000 Kwacha/month; 20,001-30,000 Kwacha/month; 30,001-40,000 Kwacha/month; 40,001-50,000 Kwacha/month; and over 50,001 Kwacha/month). Patients were asked whether income loss was directly attributable to the injury and whether or not they were the primary income earner in their household before and after injury. Additionally, patients were asked if someone stayed home specifically to provide care following injury, how long this person stayed home to provide unpaid care, and how much income they forewent to do so. Patients were also asked to report additional costs for childcare after injury. Regarding persistent changes in standard of living at one-year follow-up, we asked patients whether their injury was affecting their ability to perform activities of daily living (ADL) (0 = no effect & 10 = completely prevented). To assess food security, we asked patients if there were any instances in the last seven days prior to questionnaire completion in which their household did not have enough food or money to buy food. For affirmative responses, patients were asked whether they faced specific challenges related to food insecurity [Appendix 1][25].

Patients were asked about financial coping strategies after injury, including change in residence, sale of personal property, borrowing of money, and unenrollment of school-aged children from school. Patients were asked, when applicable, what property they sold, from whom they borrowed money, and the resulting estimated money raised. This amount was reported in MWK, converted to USD (World Bank PPP conversion rate, 1 USD = 277.41 MWK), and expressed as a percentage of the 2019 Gross Domestic Product (GDP) per capita in Malawi.

Table 1: Demographic information of all patients included in this study

Age (years) ± SD	36.0 ± 14.8
Gender	
Male	34 (81.0%)
Female	8 (19.0%)
Hospital of Treatment	
Queen Elizabeth Central Hospital (QECH)	24 (57.1%)
Kamuzu Central Hospital (KCH)	18 (42.9%)
Treatment Modality	
Intramedullary Nail	13 (31.7%)
Skeletal Traction	28 (68.3%)
No Response	1

Table 2: Average total transportation costs per patient

Average transportation costs (MWK)	2,211
Average transportation costs (USD)	$2.87

Table 3: Whole family income pre- and post-injury by income level classification

	Pre-Injury	Post-Injury	Percent Change
0 – 10,000 Kwacha/month	3 (7%)	6 (14%)	+7%
10,001 – 20,000 Kwacha/month	1 (2%)	0 (0%)	-2%
20,001 – 30,000 Kwacha/month	4 (10%)	7 (17%)	+7%
30,001 – 40,000 Kwacha/month	4 (10%)	6 (14%)	+4%
40,001 – 50,000 Kwacha/month	10 (24%)	8 (19%)	-5%
Over 50,000 Kwacha/month	20 (48%)	15 (36%)	-12%

We asked whether school-aged children were unenrolled from school because patients were unable to afford school fees or required more help around the house. All analyses were performed using SPSS (Version 28.0, IBM, Armonk, New York, USA). Chi-square tests were used to test for differences between groups for binary variables and ANOVA tests with pairwise comparisons were used to compare differences between groups for continuous variables.

Results

This study included 42 patients. The average age of all patients was 36.0 ± 14.8 years and 81% were male. Twenty-four patients (57%) presented to QECH and 18 (43%) presented to KCH. Thirteen patients (32%) had received surgery (intramedullary nailing) and 28 (68%) were treated with skeletal traction. [Table 1] Of the 28 patients initially treated with skeletal traction[9], (32%) patients were eventually converted to surgical treatment.

Financial Well-Being

Patients spent an average of 2,211 (95% confidence interval (CI), 0 to 5,753) Malawi Kwacha (MWK) per visit or $2.87 (95% CI, 0 to 26.18) USD. This includes transportation costs and money spent on the road while traveling and equates to 0.50% of the GDP per capita. [Table 2] Additional costs, such as those related to upkeep of guardians and informal payments, were not examined in this study.

At 1-year follow-up, 25 (60%) patients had returned to work, of whom 5 (20%) were unable to return to their same pre-injury job, and all reported a decrease in productivity, with mean self-reported effect of injury on productivity of 3.4 (95% CI: 1.8, 5.0) out of 10. Twelve (29%) patients reported a persistent decrease in household income level one year after injury. [Table 3] Twenty-five of 43 respondents (58%) were the primary income earners in their households prior to injury, with an average of 3.29 children and 3.88 dependents in their household. One year after injury, five patients (11%) had not regained their status as primary income earners. [Table 4]

Thirty-two (76%) respondents reported that a friend or relative stayed home specifically to care for them after their injury. These unpaid caregivers stayed home for an average of 11.9 (95% CI: 0, 31.8) weeks, and 53% of respondents stated that they left income-earning jobs to do so. There was no significant difference in the caregivers' time spent at home to care for patients treated with intramedullary nail and skeletal traction (12.2 vs. 11.8 weeks; p=0.46).

The median monthly income for caregivers was between 20,000 and 30,000 MWK/month. Furthermore, 14 (33%) patients stated that either they or their caregiver had to spend money to arrange for childcare, with amounts varying considerably between patients from 10,000 to 100,000 MWK ($36 to $360 USD) during the duration of the patient's recovery.

Standard of Living

All patients reported changes to their lifestyle as a result of their injury, with 18 (62%) of 29 respondents reporting that their injury affected their activities of daily living (ADL).

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Table 4: Patients' primary income earner status in their family before and after injury

Percentage of Patients who were Primary Income Earner in Family		
Before Injury	After Injury	Change
25 out of 43 (58%)	20 out of 43 (47%)	-11%

Table 5: Percentage of patients who reported each challenge related to food security (n=41)

Rely on less preferred and less expensive foods?	Borrow food, or rely on help from a friend of relative?	Purchase food on credit?	Gather wild food, hunt, or harvest immature crops?	Consume seed stock held for next season?	Send household members to eat elsewhere?	Send household members to beg?	Limit portion size at mealtimes?	Restrict consumption by adults in order for small children to eat?	Feed working members of the household at the expense of non-working members?	Reduce number of meals eaten in a day?	Skip entire days without eating?
74%	70%	65%	48%	26%	35%	17%	74%	48%	27%	74%	35%

[Table 5]. Ten (24%) of 42 respondents reported changing where they lived as a result of the injury. Additionally, 6 (14%) of 42 respondents reported selling personal property to cover costs while recovering from injury. This included selling livestock (3), vehicle (1), household item (1), farm produce (1), fridge (1), and radio (1). Those who sold property reported earning an average of 64,714 MWK (233 USD) from the sale of the property, equivalent to approximately 22% of GDP per capita in Malawi. Furthermore, 7 (17%) of 41 respondents reported borrowing money to cover costs after injury. This included borrowing from their neighbors/friends, family, cooperative, and church. Those who borrowed money reported borrowing an average of 76,667 MWK ($276 USD), equivalent to approximately 27% of GDP per capita in Malawi. Additionally, 4 (11%) of 36 respondents reported taking school-aged children out of school because they could not pay school fees and needed help around the house.

Discussion

Femoral shaft fractures remain a common musculoskeletal injury in Malawi. In the current study, we evaluated the direct and indirect costs of injury to patients and their families, including transportation, loss of income, and unpaid care following femoral shaft fracture. One year after their injury, many patients reported high rates of financial duress and worse standards of living compared to their pre-injury baseline. While the Malawian public healthcare system is free at the point of care for all citizens, it lacks the financial risk protection that many economists consider essential to universal health coverage (UHC)[27-33]. Financial risk protection, within the context of a UHC system, requires that health systems improve the health of an individual in a way that is not detrimental to their overall non-health well-being[27]. In Malawi, there are numerous indirect costs of care which can make treatment inaccessible and injuries catastrophic to a patient's financial well-being. In fact, the Lancet Commission on Global Surgery estimates that more than 25% of surgical patients experience significant financial distress, often leading to impoverishment[14,34].

In our study, we found that total transportation costs averaged 2,211 MWK ($2.87) per visits. Thus, despite receiving free care at government facilities, patients were required to cover transportation costs that amounted to 0.50% of GDP per capita. For reference, 0.50% of the GDP per capita for the United States ($62,794.59 USD) is $313.97, spent solely on transportation to and from the hospital. Varela et.al. similarly found that transportation costs to central hospitals were greater than $1 USD (745 MWK) 90.5% of the time, and greater than $7 USD 20.6% of the time[13].

In Malawi, this may represent a significant barrier to care considering half of all Malawians live on less than $1 USD per day[35,36]. One recent study found mobile money transfers (MMT) for transportation costs, sent prior to a patient's visit rather than a reimbursement after the visit, were highly effective for lymphoma patients[37]. This model could be applied to improve follow up for patients with traumatic injuries. Other potential ways to reduce transportation costs could include investment in road traffic coordination, improvement of lighting on roads, and public education on available and affordable transportation options.

Other indirect costs of care included loss of income. Patients reported that their injuries affected their ability to return to work and their work productivity, with several patients failing to regain their status as primary income earners in their households. Additionally, 76% of patients reported that someone stayed home specifically to provide care, for an average of 11.94 weeks, oftentimes foregoing income-generating work. One year after injury, 29% of patients reported persistent reduction in their household monthly income compared to pre-injury. This is consistent with a previous study of patients with lower extremity injuries in Malawi that demonstrated considerable financial distress in nearly all participants and loss of income due to an inability to ambulate[14]. As a result of financial hardship, 14% of patients sold property and 17% of patients borrowed money. This is consistent, although to a lesser extent, with a study conducted in Uganda which demonstrated that patients lost 88.4% of their annual income in the 12 months following injury and borrowed 28% of their pre-injury annual income[21]. Given that Uganda does not have a nationalized health system, it is possible that the nationalization of Malawi's public health system offers some, but not full, financial risk protection for injured patients and their families.

The persistent reduction in household income and work productivity that we observed in this study is consistent with Chokotho, et. al.'s study demonstrating that quality of life and functional outcome scores had not returned to their pre-injury baseline at 1-year follow-up. Of note, patients reported the worst quality of life and functional outcome scores at 6-week follow-up[11]. Unlike Chokotho et. al.'s study, we found no significant difference in pre-injury income, post-injury income, return to work, change in primary income

earner status, or relative change in income level between those treated with skeletal traction and intramedullary nail. This is likely due to small sample size, as our study was underpowered to adequately examine differences between the two treatment groups.

Femoral shaft fractures can have substantial effects on the standard of living of patients in Malawi, including changes in lifestyle, food security, housing, and education. About half of all Malawians live under the poverty line (137,425 MWK per person per year) and one-fifth live in ultra-poverty, meaning many in Malawi are particularly vulnerable to the devastating effects of injury on social and financial wellbeing[14,38]. We found that 62% of patients reported decreased ability to perform ADLs. This may have affected patients' food security, since 85% of Malawians are dependent on subsistence farming[15]. Indeed, we found that 49% of all respondents reported food insecurity one year after their injury. Some patients and their families reportedly coped by borrowing money, selling personal property, or changing their residence. In some instances, patients were forced to unenroll school-aged children from school. Agarwal-Harding et al similarly found that patients with femoral shaft fracture in Malawi face numerous social and financial challenges following injury[16]. This is consistent with previous studies demonstrating the potential multigenerational repercussions of trauma that can push patients into vicious cycles of poverty and hardship[6].

Limitations

There were several limitations to this study. First, although we attempted to implement our questionnaire on socioeconomic impact of injury at initial enrollment, 6-month, and one-year follow-up for all patients, we were unsuccessful due to logistical challenges namely overburdening data collectors and patients. Most data were collected at one-year follow-up and at the two central hospitals included in the larger study. There was no standardized training of fieldworkers distributing the questionnaires. Patients reporting on their pre-injury and current circumstances at one-year follow-up may have been subject to recall and recency bias. Only 42 (22%) of the 187 patients who completed one-year follow-up also completed our questionnaire. Even the larger study had a 25% loss to follow-up with only 187 (75%) of the 248 total enrolled patients completing one-year follow-up evaluations[20]. Our study population, therefore, may not be representative of all femoral shaft fracture patients and may actually underestimate the indirect costs and socioeconomic impact of injury since those who are nearby and/or better off financially may have been more likely to return for their 1-year follow up. Moreover, relatively small sample size prevented us from being able to conduct additional sub-analyses based on treatment type. According to a previous study by Chokotho, et. al., femoral shaft fracture patients in Malawi treated with intramedullary nail had better quality of life and functional outcomes compared to those treated with skeletal traction at 6 weeks, 3 months, and 6 months after injury[20]. Therefore, it is possible that skeletal traction is also associated with greater socioeconomic burden at these timepoints, but we were underpowered to detect a significant difference in our study. Third, given the nature of the food insecurity questions, it was impossible to assess food insecurity prior to injury. It is possible that patients had pre-existing food insecurity. Additionally, there was no control group with regards to food security, so all information should be analyzed within the context of the other socioeconomic circumstances and not on their own. However, in the context of the numerous financial hardships mentioned in this study, such as lower income levels and the need for caregivers to forego income, we believe that food insecurity, whether pre-existing or new, is noteworthy since it can present further challenges and exacerbate existing ones for patients and their families.

Conclusion

Loss of income and decreased productivity at work may contribute to food insecurity, housing insecurity, and withdrawal of children from school. At 1-year follow-up, patients generally did not fully return to their pre-injury baseline socioeconomic condition. Future studies should examine these trends more closely at multiple timepoints. Increased investment of financial and human capital should be made into capacity building initiatives, preventative measures, and new health financing policies to decrease the burden of injury, increase access to timely and affordable orthopaedic trauma care services, improve treatment to minimize disability, and improve financial risk protection for patients with musculoskeletal injuries in Malawi.

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Appendix: Questionnaire at ONE-YEAR FOLLOW-UP VISIT:

A) Transportation costs	
How long did it take you to get to the hospital for this visit (one way)?	___ hours walking ___ hours with transport ___ other: _____
How did you get to the hospital for this visit (method of transportation)? (select all that apply)	1) Walking 2) Bicycle 3) Motorcycle 4) Minibus 5) Private vehicle 6) Ambulance 7) Police 8) Company car 9) Other
How long does a visit with your doctor typically take, including time on the road and waiting time (total turnaround time)?	___ hours
How much money did you spend to come to the hospital (both ways)?	_____ MK
How much did you spend on food on the road while waiting?	_____ MK
B) Loss in Income	
Who is the primary income earner in the household?	1) Patient 2) Wife/mother 3) Husband/father 4) Extended family 5) son/daughter 6) Other (specify
Are you currently working outside of the home for pay?	1) Yes 2) On sick leave 3) Retired 4) Unemployed
Has the patient returned to work?	1) Yes 2) No
Estimated date of return to work?	_____ (mm/yy)
What job did the patient return to?	
Is this the same job the patient had before the injury?	1) Yes 2) No
Total monthly income for patient prior to injury	1) 0-10,000 Kwacha/month 2) 10,001-20,000 Kwacha/month 3) 20,001-30,000 Kwacha/month 4) 30,001-40,000 Kwacha/month 5) 40,001-50,000 Kwacha/month 6) Over 50,001 Kwacha/month

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How regularly did you work before your injury?	1) Throughout the year 1) Seasonal 2) Day labor 3) Other (specify)
Total monthly income for whole family prior to injury	1) 0-10,000 Kwacha/month 2) 10,001-20,000 Kwacha/month 3) 20,001-30,000 Kwacha/month 4) 30,001-40,000 Kwacha/month 5) 40,001-50,000 Kwacha/month 6) Over 50,001 Kwacha/month
Total monthly income now	1) 0-10,000 Kwacha/month 2) 10,001-20,000 Kwacha/month 3) 20,001-30,000 Kwacha/month 4) 30,001-40,000 Kwacha/month 5) 40,001-50,000 Kwacha/month 6) Over 50,001 Kwacha/month
Is the change related to your injury?	1) Yes 2) No
During the past seven days, how many hours did you miss from work because of problems associated with your injury? (Include hours you missed on sick days, times you went in late, left early, etc., because of problems associated with your injury. Do not include time you missed to participate in this study.)	_____ hours
During the past seven days, how many hours did you miss from work because of any other reason, such as vacation, holidays, time off to participate in this study?	_____ hours
During the past seven days, how many hours did you actually work?	_____ hours
During the past seven days, how much did your injury affect your productivity while you were working? (Think about days you were limited in the amount or kind of work you could do, days you accomplished less than you would like, or days you could not do your work as carefully as usual. If the lower limb fracture affected your work only a little, choose a low number. Choose a high number if the lower limb fracture affected your work a great deal.)	Scale from 0-10 0 = Injury had no effect on my work 10 = Injury completely prevented me from working
During the past seven days, how much did your lower limb fracture affect your ability to do your regular daily activities, other than work at a job? (By regular activities, we mean the usual activities you do, such as work around the house, shopping, childcare, exercising, studying, etc. Think about times you were limited in the amount or kind of activities you could do and times you accomplished less than you would like. If the lower limb fracture affected your activities only a little, choose a low number. Choose a high number if the lower limb fracture affected your activities a great deal.)	Scale from 0-10 0 = Injury had no effect on my daily activities 10 = Injury completely prevented me from doing my daily activities
C) Costs of unpaid care	
Did any family member or friend accompany you on your visit to hospital?	1) Yes 2) No
If Yes, how much does your friend/family member earn per day?	1) 0-250 Kwacha/day 2) 251-500 Kwacha/day 3) 501-1000 Kwacha/day 4) 1001-1500 Kwacha/day 5) 1501-2000 Kwacha/day 6) Over 2001 Kwacha/day 7) Don't know

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Since the time of your injury, did someone stay home specifically to take care of you?	1) Yes 2) No
If Yes, for how long?	_____ number of weeks
Did they leave an income-earning job to care for you?	1) Yes 2) No
What is/was the monthly income of the person who is taking care of you?	1) 0-10,000 Kwacha/month 2) 10,001-20,000 Kwacha/month 3) 20,001-30,000 Kwacha/month 4) 30,001-40,000 Kwacha/month 5) 40,001-50,000 Kwacha/month 6) Over 50,001 Kwacha/month 7) Don't know
Did you, or the person who is taking care of you, spend any money to arrange care for children while away from the home?	1) Yes 2) No
If yes, how much money did you, or the person who is taking care of you, spend on childcare?	_____ MK
D) Coping costs	
In the past 7 days, have there been any times when you did not have enough food or money to buy food?	1) Yes 2) No
In the last 7 days, how many days has your household had to:	
Rely on less preferred and less expensive foods?	Scale from 0-7
Borrow food, or rely on help from a friend of relative?	Scale from 0-7
Purchase food on credit?	Scale from 0-7
Gather wild food, hunt, or harvest immature crops?	Scale from 0-7
Consume seed stock held for next season?	Scale from 0-7
Send household members to eat elsewhere?	Scale from 0-7
Send household members to beg?	Scale from 0-7
Limit portion size at mealtimes?	Scale from 0-7
Restrict consumption by adults in order for small children to eat?	Scale from 0-7
Feed working members of the household at the expense of non-working members?	Scale from 0-7
Reduce number of meals eaten in a day?	Scale from 0-7
Skip entire days without eating?	Scale from 0-7
Did you change where you live because of your injury?	1) Yes 2) No
Have you sold any of your property to cover costs while recovering from your injury?	2) Yes 2) No
What did you sell?	1) Land 2) Livestock 3) Transport/Vehicle 4) Household item 5) Farm produce 6) Other (specify)
How much did you earn from the sale of your property?	_____ MK
Number of children in family's care currently	
Number of people dependent on patient currently	
Did you have to take any of your school-aged children out of school due to your injury?	1) Yes 2) No

If yes why?	1) Needs to help around the house 2) No money for school fees 3) Has to work to earn income 4) Other (specify)
Did you borrow any money to cover costs while recovering from your injury?	1) Yes 2) No
How much did you borrow?	_____ MK
From whom did you borrow?	1) Family 2) Neighbors/Friends 3) Private Bank 4) Cooperative 5) Church 6) Other (specify)

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