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# The Return-to-Work Experience of Lower Extremity Amputees Provided with Prostheses at UERMMMCI CTC-PO

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## Abstract

**Introduction** Since there are limited studies about the return-to-work experiences of Filipino amputees, this study will be able to contribute to studies that delve deeper into the lower extremity amputees' experiences and put into light the factors that may be present in relation to their return to work.

**Methods** This study utilized a qualitative phenomenological design. Participants who were willing to join the study were all gathered for a focus group discussion conducted by a hired interviewer. The researchers adapted Colaizzi's descriptive phenomenological method for analyzing the data.

**Results** Factors that allowed amputees to have a successful return to work experience were motivation to continue with life, positive impact of lower extremity prosthesis, and rehabilitation. Factors that hindered the successful return to work of amputees were social barriers, work environment, negative self-image, discrimination from the community, and fit of prosthesis.

**Conclusion** Employment was possible after amputation among amputees who were provided with prosthesis at UERMMMCI, since most of the respondents of this study were employed. Positive and negative factors that influenced their return to work were also identified. Non-compliance to rehabilitation limited the usage of prosthesis resulting in not being able to return to work.

**Key words:** Return to work experiences, lower limb amputees, lower extremity amputees, prosthesis, attitude of rehabilitation professionals, motivation in return to work, return to work

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**A**mputation results in loss of a limb secondary to trauma, chronic disease, or congenital causes. Not only does it result in a change in body structure, but it also greatly influences the amputees' activities of daily living, social participation, and quality of life. One study stated that the most common participation restrictions experienced by major limb amputees are physical recreation, leisure activities, and employment or job seeking.<sup>1</sup> A study in Canada showed that 66% of their participants were able to return to work after amputation. Fifty-seven percent who were able to return to work were back in their previous jobs and 43% landed in a different job. The thirty-four percent who were unemployed after amputation were due to

continued illness, amputation or prosthesis-related problems and other domestic problems.<sup>2</sup>

Rehabilitation is beneficial for amputees to increase their participation in the community. Rehabilitation professionals play an important role in returning amputees to the highest level of function possible, including returning amputees back to work. The aim of rehabilitation after an amputation is to improve the quality of life by lessening the secondary impairments that may occur. An important component of rehabilitation of amputees is the provision of prosthetic devices and physical therapy to increase their mobility and function. A significant proportion of patients who underwent amputation believe that rehabilitation is inadequate in restoring their functional level similar to that before they were amputated.<sup>3</sup>

There is limited published literature about the return-to-work experience of amputees in developing countries, specifically studies that explore the employment status and factors that affect employment of Filipino amputees. Most of the published studies regarding employment of patients with amputation are quantitative studies that investigated how many amputees were able to return to work and how many were unsuccessful in doing so. This study aims to highlight the factors which may impact the return-to-work experiences of lower extremity amputees after receiving their lower limb prostheses and rehabilitation services. This study focuses on the participation restriction experienced by lower extremity amputees regarding employment and job seeking. Thus, this study answers the question: what is the return-to-work experience of lower extremity amputees who received prostheses at UERMMMCI Clinical Training Center-Prosthetics and Orthotics (CTC-PO)?

## Methods

Under the supervision of UERM-CTC staff, the study was conducted at the UERMMMCI CTC-Laboratory Room in the Tan Yan Kee Building in Quezon City, Metro Manila. The list of eligible patients was obtained from the CTC-PO through proper channels. The researchers selected and invited patients who met the following criteria: 1) either trans-femoral or trans-tibial amputees with amputations caused by either trauma or chronic disease, 2) belonging to the working age group 18-64 years, and 3) and received a lower extremity prosthesis with or without prosthetic training from January 2013 to December 2018.

The study utilized a qualitative research design using semi-structured interview questions to guide the interview process. Specifically, this study used a phenomenological study design that attempted to interpret amputees' perspectives and experiences about return to work based on their answers through the in-depth interview questions. The researchers employed the use of the focus group discussion (FGD) to encourage respondents to exchange and explore their experiences, ideas, and way of thinking. The researchers hired an interviewer with the following qualifications: BS Psychology graduate and has experience in conducting focus group discussions. The interviewer asked questions using a semi-structured interview guide developed by the researchers. The questions were based on information gathered from the review of related literature about experiences that amputees had with rehabilitation and other related domains of the study. Before the FGD, the respondents were all assured that their identities would be kept confidential by assigning each respondent a number or pseudonym. Audio recording, video recording and transcribing were utilized with written permission during the interview to record the answers of the respondents. Transcriptions were written word for word from the answers of the respondents. Transcribing of the responses was done by the researchers during the focus group discussion. Confirmation of the transcriptions were done after the interview by listening to the audio recording to make sure that everything had been written verbatim and accurately. Validation was done by having the respondents read and sign the transcriptions. Once everything was written, confirmed, and validated, transcriptions were all translated into English.

Researchers made use of the Colaizzi's method for the analyzation of themes. From the transcripts, significant statements were extracted and were clustered into themes. The steps were repeated until theoretical saturation was reached. The meaning of themes were analyzed and were coded with an adequate description. The researchers then constructed full, thick, rich descriptions of the themes and validated them by incorporating any changes by means of follow-up phone calls.

The research was approved by the UERMMMCI Research Institute for Health Sciences Ethics Review Committee. The study was done over a course of two months. On the day of the FGD, the researchers informed respondents that all information gathered

will be kept confidential and informed consent was obtained from the respondents.

## Results

A total of 175 potential respondents were contacted. In the list of patients provided by UERM CTC-PO, there were 42 employed amputees and 135 unemployed amputees. Only one employed amputee responded and was recruited. While among the unemployed amputees, 20 responded and 12 were recruited. During the first focus group discussion, four of the unemployed respondents mentioned that they had jobs. This incident prompted the researchers to conduct a screening interview before the focus group discussion. During the screening, seven more unemployed respondents were employed. In total, 11 originally unemployed respondents were employed. A total of 12 employed respondents and only one unemployed respondent participated. No respondents withdrew during the course of the study.

Half of the respondents' reason for amputation was trauma, 22% for diabetes complications, and the rest for other chronic diseases. Around 70% were transfemoral amputees and the rest were transtibial amputees. Majority of the respondents were employed and the remaining 7% were unemployed. Also, majority of the respondents were high school graduates (54%), 23% were college graduates, and the rest were elementary graduates.

## I. Thematic analysis

With the respondents' gathered responses, the researchers were able to construct six major themes and their corresponding subthemes. The six themes are: 1) work after amputation, 2) motivation to continue with life, 3) impact of lower extremity prosthesis on the participants, 4) positive impact of rehabilitation, 5) attitude of rehabilitation professionals towards patient, and 6) hindrances in returning to work.

### Theme 1: Work after amputation

As the researchers' aim was to determine out the return-to-work experience of amputees, the responses were gathered on this first major theme. The respondents shared their varied experiences. The first subtheme under this major theme was "return to old work" in which respondents shared their experiences with attempts at returning to their previous employment. One respondent who was able to return to her previous employment as a seamstress at home shared her experiences. The interviewer asked: [*I: How is your job as a seamstress?... Was it like before (you were amputated)?*] with her response simply being: [*P3-3: Mhmm*"]. This response affirms that her work experience as a seamstress before and after amputation are the same.

**Table 1.** Demographic characteristics of the 13 respondents.

Codename	Age	Sex	Type of amputation	Cause of amputation	Employment status	Educational attainment
P1-1	55	M	Transtibial	Diabetes mellitus	Employed	High school graduate
P2-1	32	M	Transfemoral	Trauma	Employed	College graduate
P3-1	34	M	Transtibial	Trauma	Employed	Elementary Graduate
P4-1	28	M	Transtibial	Hemangioma	Employed	High school graduate
P1-2	33	M	Transtibial	Trauma	Unemployed	High school graduate
P2-2	55	M	Transtibial	Trauma	Employed	High school graduate
P3-2	56	M	Transfemoral	Necrotizing fasciitis	Employed	High school graduate
P4-2	27	M	Transfemoral	Trauma	Employed	High school graduate
P5-2	40	M	Transtibial	Diabetes mellitus	Employed	Elementary graduate
P6-2	38	F	Transtibial	Trauma	Employed	High school graduate
P1-3	35	M	Transfemoral	Cancer	Employed	College graduate
P2-3	55	M	Transtibial	Diabetes mellitus	Employed	High school graduate
P3-3	49	F	Transtibial	Trauma	Employed	High school graduate

The second subtheme that arose was “*work with a lower level of physical demand*” with many respondents sharing their personal experiences with changing to an entirely different line of work. This subtheme was best expressed in the narrative of one respondent who shared that he was able to work prior to amputation as the “*big man*” on a construction site. During the FGD, he stated that he is now currently working as a fish vendor from the comfort of his home together with his family [P2-1: *Yes, and there’s a fish stand at our house. My wife helps me handle it right now.*]

#### *Theme 2: Motivation to continue with life*

The second major recurring theme that arose was motivation to continue seeking re-employment. The respondents shared what pushed them to keep going. Spiritual faith and social support emerged as the two subthemes that were seen to be essential in the respondents’ eventual return to work.

The first subtheme was “*spiritual faith in regard with their return to work*” in which many of the respondents stated that their spiritual faith was the source of their motivation in their life and eventual attempt in returning to work. As recounted, P1-3 mentioned that God was the reason for his work. [P1-3: “*...With God’s help I was able to work...*”]. The second subtheme that arose from the discussion was “*social support*”. Respondents mentioned that support from family and friends played a vital role in their return to work. For one of the respondents, his family worked with him to establish their business. He recalled the following: [P2-1: “*...my nephews... I already have someone with me...*”] As for another respondent, her family members gave her strength and helped her find work. She recalled the following: [P6-2: “*...my uncle... That’s where I got my inner strength.*”]

#### *Theme 3: Impact of lower extremity prosthesis on the participants*

The third major theme that emerged was the impact of the prosthesis, whether it be the improved mobility, the physical support given, or the courage to conquer the fears and obstacles life threw at them, these benefits of prostheses evidently made a huge impact in the improvement of quality of life and eventual return to work of the respondents.

The first subtheme that arose from this major theme was “*provides efficient mobility*” in which two

respondents said that they now utilize both hands as the use of prosthesis freed their hands from using crutches. The interviewer led with the following: [I: *As for your devices or prosthesis, in your opinion, what was its role in your line of work now or with the things you keep yourself busy with.*] One respondent answered: [P1-1: “*...Mobility...*”] which was supported by response by a different respondent: [P3-2: “*... You can go where you need to go now...*”]

The second subtheme that arose was “*promotes independence*” in which the respondents shared the activities they were able to do on their own again. One respondent stated: [P4-2: “*...I was able to ride a bike to work...*”] with another respondent sharing a similar experience: [P3-2: “*...now I can roam around using my own motor.*”]

The third subtheme that arose was “*boosts confidence*” in which respondents shared that receiving prosthetic devices had a positive impact in their confidence. When the interviewer asked one of the respondents: [I: *Sir P2-1, what was the role of your device to you?*] where he answered simply: [P2-1: *Confidence... You’re able to have confidence again...*] Many respondents nodded and agreed. One respondent also shared the following: [P2-2: *Ever since I was able to get a leg, my confidence came back. No matter where I went, I am able to face people, I can speak to them now.*]

#### *Theme 4: Positive impact of rehabilitation*

The fourth major theme that arose was positive impact of rehabilitation. The subthemes found that correlated with this major theme were: “*increase in muscle strength for mobility*”, “*proper patient education*”, and “*improves stamina when using prosthesis*”. The first subtheme that arose was “*increase in muscle strength for mobility*.” This subtheme is best narrated with one respondent’s statements: [P5-2: “*...therapy was really helpful. Within two months, I regained my strength...*”]. The second subtheme coded “*proper patient education and prosthetic training*” saw that proper patient education was a significant part of rehabilitation, targeting specific muscles and teaching proper safety techniques. One respondent recalled the following: [P3-1: *They taught me how to properly use my crutches...My physical therapist told me that I was the only one who can help myself... That’s when I realized that I needed everything they said. It’s hard if you don’t listen to who knows more.*]. The third subtheme that arose was “*improves stamina when using prosthesis*.” Along with the increase of



muscle strength found, improvement of stamina when using prosthesis during ambulation was seen with one respondent stated the following: [P3-2: ... it increased my strength and stamina.]

*Theme 5: Attitude of rehabilitation professionals toward patient*

Aside from the impact of prosthesis in return to work, respondents also shared their experiences with health professionals' attitude they had encountered during their rehabilitation. Health care professionals' attitude towards patients, both positive and negative, had an impact with their patients' motivation and encouragement to undergo rehabilitation. Correlating with the impact positive attitude, one respondent shared the following: [P3-1: ...Because my therapist that time told me that I am the one who can help myself, the therapist will just tell you what's the right thing to do...] In comparison, the impact of negative therapist attitude with one respondent's statement: [P5-2: ...When your therapist is unaccommodating first of all you wouldn't want to undergo therapy...]

*Theme 6: Hindrances in returning to work*

The last major theme that arose found the hindrances in the amputees return to work experiences. This major theme has the following subthemes: "work environment", "social barriers", "negative self-image (post-amputation)", "discrimination from the community", and "fit of prosthesis". In the first subtheme "work environment", a respondent expressed the impact of his work environment in his thoughts about returning to his old employment. He was not able to return to his old job since his prosthesis is contraindicated in his line of job: [P1-1: ...I cannot work there...I have a metal. In the distance I work (from the electricity), the current will go near me...] while another respondent stated that his prosthesis made it harder for him to execute his job: [P2-1: ...When I ride the motorcycle. Of course, it's hard to lift it (prosthesis) up. That's what I doubted...]

In the second subtheme "social barriers", it was seen that the respondents had their fair share of experiencing limitations because of the barriers caused by the people around them. Best told in the perspective of one respondent, he shared the following: [P1-1: ...And then in the jeepneys. They won't let you sit, right? That's the... you're already in crutches, they already saw you in crutches they still would not let you

go first...]. In the third subtheme "negative self-image (post-amputation)", most of the respondents that the researchers interviewed went through a phase where they see themselves as useless with many having doubts about their capabilities to do their work. One respondent shared: [P2-2: ...I asked our president why he chose me to work for him when there's a lot of people who are more complete (physically) than me.] Another shared the following [P1-3: It took me a long time before I got a job. The reason why is that I'm shy...]

The fourth subtheme that arose was "fit of prosthesis". Discussions about how the fit of their prosthetic devices had a major impact on functioning and compliance were shared. The following were experiences recalled by the respondents: [P4-1: ...the only problem is that if I wear it for too long, my prosthesis becomes loose so I add 1 or 2 layers of socks] and [P1-1: ...it requires maintenance especially with us who are diagnosed with diabetes. When it becomes loose, it's not easy to fix it by yourself and when that happens, I start to walk slowly because it's really difficult.]

*II. Thoughts from an unemployed respondent*

As the researchers were only able to recruit one unemployed respondent, theoretical saturation was not achieved so his thoughts were gathered instead.

*Theme 2: Impact of prosthesis in their return to work*

In the subtheme "provides efficient mobility" the unemployed respondent has recalled the same experience with the employed respondents: "[P1-2: When I got my own prosthesis, I was able to grab the stairs...]. He also shared how many he was able to show people around him that he was capable and independent.

*Theme 5: Attitude of rehabilitation professionals toward patient*

A response from the unemployed participant recalled an experience which supported the fifth theme from the employed respondents. They both expressed that the attitude of health professionals has an impact on their rehabilitation. [P1-2: I experienced...ma'am, very unaccommodating! While doing (activities)...ma'am, "(Do it) like this, not like that!]

*Thought 1: Non-compliance to rehabilitation*

It was seen that non-compliance to rehabilitation caused the respondent limitations in the use of his prosthesis. The interviewer asked: *[I: Did you undergo rehab, P1-2?] in which he answered [P1-2: I didn't... I'm still a bit not used to it...]*

*Thought 2: From employment to unemployment*

After amputation the participant recalled the following as he was not able to return to his previous work and spent most of his time being a househusband. He shared: *[P1-2: Now that I'm currently unemployed because the store has been closed, I worked as painter, Xerox, ring binder... Since then I am now a house husband, I am the cook, mostly doing things around the house... I was a barker (for jeepneys) before I was amputated...]*

## Discussion

*Work after amputation*

A study conducted by Ligan found that amputees were breadwinners in their family pre-amputation resulting in a decrease in household income post-amputation.<sup>4</sup> The researchers noted that the conditions and reasons for return to work varied in each participant. Most of the respondents managed to return to work but with modifications in the work environment. One participant was able to return to their previous employment as it was home-based employment. One respondent became unemployed.

The demographics gathered by the researchers were consistent with the results in the study by Narang. In the study, only 12% stayed in the same occupation, 47% had to change their occupation, 3.5% were unable to work, 4% were able to work but were unemployed.<sup>5</sup> In another study, there was a high percentage of amputees who were able to return to work and most (89%) of them were using a prosthesis that gave them the capability to achieve a better opportunity for job reintegration.<sup>6</sup> With the demographic data gathered, the researchers noted that a shift to a lower level of physical demand was common. This is supported by a study by Schoppen, who concluded that it is better for amputees to change their work to a lower form of physical workload after it was shown that 145 of

their subjects who changed to another job after the amputation were successfully reintegrated.<sup>7</sup>

*Motivation to continue with life*

Feelings of giving up, of not caring, and of not being able to have a good future are prominent among the respondents. A solid foundation in spiritual faith positively influences the return to work of the amputees. Trusting in God was seen as one of the coping mechanisms of amputees. Some of the respondents believed that God has a reason for everything that is happening and that faith helped them to gain acceptance.<sup>8</sup> Solid family support also aided amputees' successful return to work as they relied on their families and friends as a coping strategy to survive and overcome their everyday life experiences after amputation.<sup>8</sup> Family and friends' positive support gave amputee patients strength and a sense of comfort that allowed them to overcome their hardships or struggles, resulting in most able to return to work. The researchers heavily stress the importance of family and friends' support and suggest that the presence of these support structures during their rehabilitation may have a large impact on the patient's recovery.

*Impact of lower extremity prosthesis on the participants*

It was seen that prosthesis played a huge role in mobility. In a particular study by Narang, there was a high percentage of amputees who were able to return to work and most of them were using a prosthesis. Prosthetic use gives amputees the capabilities, like independence and efficient mobility, return to a higher level of function that allowed them to achieve a better opportunity for job reintegration.<sup>5</sup> Similarly, in a study by Wurdeman, mobility was found to be positively correlated with quality of life, general satisfaction, as well as their confidence level.<sup>9</sup> Additionally, Sinha measured quality of life among amputees and found that mobility is an important rehabilitation goal to increase the quality of life.<sup>10</sup> These studies are relevant today as they demonstrate how prosthetic rehabilitation maximizes an amputee patient's mobility and consequently increases their quality of life. Simultaneously, researchers of this study also found that mobility was a factor in an amputee's recovery and quality of life. Mobility's relation to a higher quality of life has also been seen

in the factors that enabled these patients to return to work successfully, whether it was in the same line of work or in a different one.

#### *Positive impact of rehabilitation*

The positive impact of rehabilitation seen during the discussion were increase in muscle strength, proper patient education, and improvement of stamina. Proper patient education enabled amputees to be aware of ways to prevent secondary complications that may make their condition worse, thus delaying their return to work. This was seen in a respondent who failed to comply with his rehabilitation program, resulting in a harder time getting used to his prosthesis. It is also equally essential that the rehabilitative team educate patients about the functional capabilities they can still accomplish despite their amputation. This is important as many patients lose hope that they will be able to function normally and live full lives. Likewise, improvement of stamina proved to be another important impact of rehabilitation since it enabled the amputees to endure the physical demand of their occupation; this should be given emphasis during rehabilitation. It is seen in the study of Alsofyani, where a multidisciplinary approach to rehabilitation of amputees improved compliance, resulting in an increase of muscle strength.<sup>11</sup>

#### *Attitude of health professionals*

A respondent acknowledged how the negative attitude of his therapist may have had a factor in him not wanting to attend his therapy sessions. In conjunction with the study of Mussener, other negative attitudes seen were lack of concern and nonchalant manner of treating the amputees.<sup>12</sup> Although, according to Yorke, if a health professional's attitude is positive and empowering, amputees undergoing rehabilitation may be more motivated to finish the program and improve themselves.<sup>13</sup>

#### *Hindrances in returning to work*

From the responses of the respondents, jobs such as those involving electricity and a high-level of demand hindered them from returning to work. They could not be employed in jobs involving electricity because their prosthesis would conduct electricity. Difficulty in mobility was mentioned because of the bad fit

of the prosthesis. Salawu stated that manufacturers should educate the amputees regarding the fit of the prosthesis, since it may cause a wound on the stump and eventually hinder the amputees from working.<sup>14</sup>

Negative self-image and doubt in their capabilities hindered them from returning to work. Durmus discussed that physical capacity was negatively correlated with depression, phobic anxiety and trait anxiety and positively correlated with self-esteem.<sup>15</sup> With regards to social barriers, respondents stated that judgment of being incomplete, and lack of family support were factors that hindered them. Lack of social support could lead to amputees' frustrations due to the need to depend on others to perform various activities. As in the study of Junior, lack of social support can be a hindrance in returning to work to amputees.<sup>16</sup>

Employment was seen to be possible after amputation since most of the respondents were currently employed. Variety in work experiences was seen as most of the respondents managed to return to work but with modifications in the work environment or were able to return to their previous employment as home-based employer. Positive experiences that serve as factors that allow return to work were motivators to continue with life such as spiritual faith and social support as well as the impact of prosthesis. Negative experiences that hindered return to work include work environment, negative self-image, social barriers, and discrimination in the community. Also, the influence of physical therapy rehabilitation was also found to be significant to job reintegration. Lower extremity prosthesis provided efficient mobility, promoted independence and boosted confidence that helped them in returning to work.

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