

LIVED EXPERIENCES OF BELOW-THE-KNEE AMPUTEES RELATED TO DIABETES MELLITUS IN SAN PABLO CITY, LAGUNA

* Jedeia-el S. Orillaza

** Hana Andrea Nixie F. Quinton

*** Nicole D. Residuo

**** Angielyn S. Sazon

***** Lexter John S. Vallejo

***** Vivian P. Lajara

***** Marc Lester F. Quintana

Paper Received: 14.12.2023 / **Paper Accepted:** 10.01.2024 / **Paper Published:** 11.01.2024

Corresponding Author: Jedeia-el S. Orillaza; **Email:** jeiaorillaza@gmail.com; doi:10.46360/globus.met.320241010

Abstract

This research paper is fulfilled to better understand the lived experiences of below-the-knee amputees with diabetes mellitus who reside in San Pablo City, Laguna. The researchers conducted this research using a qualitative approach and used interview guide questions to interview five participants. A phenomenological approach was used, which sought useful information, feelings, and experiences from the amputees. Following this, the responses were transcribed, given themes, and analyzed. The participants' responses revealed that their physical, financial, emotional, and psychosocial lives were negatively affected. On the other hand, coping mechanisms, spiritual beliefs, family support, financial support, and socialization supports the participants. In conclusion, the findings of this study show that although amputation may have beneficial outcomes, these benefits do not yet outweigh the participants' negative experiences, and assistance is still required in a variety of aspects of their lives.

Keywords: Amputation, Amputees Diabetes Mellitus, Phenomenological Approach.

Introduction

Diabetes is a disease that damages nerves and blood vessels and reduces blood flow, which may be either caused by genetic conditions or various lifestyle factors that develop over time (Osborn, 2022). Blood clots are formed and narrow the artery, preventing nourishment from reaching the organs and tissues, resulting in tissue death. Diabetes foot, one of the most severe and weakening effects of diabetes, diabetes foot has slowly become more common over the past ten years. 463 million people worldwide are likely to have diabetic foot ulcers in 2019, and by 2030, that number is projected to increase to 578 million (Bacila et al., 2022). People living with diabetes who have diabetic ulcers have an increased risk of needing an entire or partial leg amputation since 54% of surgical amputations are caused by diseases such as diabetes and peripheral arterial disease, which are complications involving blood vessels and conditions in which the flow of the blood is affected. Less than 2% of amputations are performed to prevent the spread of cancer; meanwhile, amputations due to trauma make up roughly 45% of all cases (Shores, M.D. 2021). This results in the need for amputation of the lower limb, which is the most common and applicable type of amputation for these conditions and has also been performed since prehistoric times. However, amputation of lower limbs restricts daily activities, jeopardizes safety, and limits participation in normal social roles, lowering someone's quality of life (Faulk and Molina, 2022).

With the amount of attention this problem has received from researchers, the main viewpoint of interest is to know the lived experiences of amputated clients with diabetes mellitus, leading people to new ideas and giving various points of view to researchers. In recent years, assistive devices like crutches, wheelchairs, canes, and scooters have been provided for those amputees.

These devices may aid in improving the quality of life, as they can temporarily or permanently restore functional ambulation. However, some amputees are disrupted and have trouble with how they perform their physical activities because the assistive devices aren't providing much support, thus, leading them to become inefficient in doing their work. Due to their cost, not all amputees can afford to buy these assistive devices. At the same time, their education, occupation, and income are factors that limit them from affording training and therapy sessions to restore their health. Having prosthetics and therapy sessions as coping methods could be factors affecting the quality of life (Henly, 2020).

Based on the research study by Kizilkurt et al. (2020), after undergoing amputation, an individual's self-esteem, self-actualization, and body image are factors that affect their quality of life and social functioning. Reduced quality of life is experienced by those who suffer from depression and anxiety, distorted body image, low self-esteem, and a lack of perceived social support. However, directly solving the problem to change the source of their stress and managing their emotional distress could provide solutions to improve one's quality of life.

This study utilized the qualitative research approach to further identify which factor or factors had the most impact on below-the-knee amputated patients in terms of their overall lived experiences. This served the purpose of identifying the significant needs of amputees based on how they have lived since their amputation. This provides useful information to nurses who provide assistance in the care of patients with amputations below the knee. The findings of this research may help the rehabilitation team figure out what healthcare interventions are most appropriate and helpful for amputees. It serves as a mirror indicating what practices have led the patient to safe and efficient living as amputees and allows nurses to intercede or assist them with the various constraints that may occur prior to and during the caring process.

The conditions, perspectives, factors, and lived experiences of amputated people in connection with how they live at home and in other places outside the comfort of their homes are discussed in this study. This is to shed further understanding and allow people to learn about the experiences of people with below-the-knee amputation, what challenges and instances they are encountering, and what coping strategies and methods they are utilizing.

Improving the physical and mental components of those with below-the-knee amputations could improve one's quality of life. The objective of this research is to use the phenomenological approach to seek useful information from the amputees'

narratives, including their experiences, feelings, perceptions, and the impact of what amputation has brought to them, in order to produce in-depth descriptions of their situation, unveil the experiences, and gain an understanding of the significant changes amputation has brought about in their daily lives.

Theoretical Framework

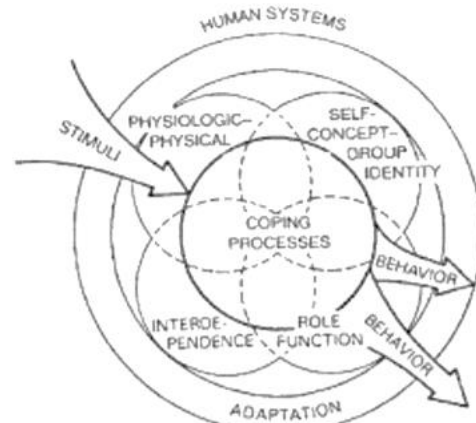


Figure 1: Model of Sister Callista Roy's Theory of Adaptation

This study is anchored on Roy's Adaptation Theory, which served as a guide for the researchers to explain, describe, and predict the lived experiences of the participants and their adaptation brought by amputation.

Based on the adaptation theory of Sister Callista Roy (1976), the theory is unique and relevant as it specifies the details before generalizing. It specifically looks for the factors firsthand before generalizing the theory, unlike other theories. It is not specifically detailed, like the needs, aspects to be considered, and factors that relate to adapting and coping mechanisms. It is specific and focused; it does not rely only on the general means; its concept is adaptive to the lived experiences, relying on what adjustments and theories or mechanisms would fill in, unlike other theories.

Four modes of this theory are the physiologic, self-control, role function, and interdependence modes, which make up the concept of the theory. The **physiological mode** focuses on how the physical aspects interfere with an individual's everyday life and activities after being amputated below the knee. On the other hand, the **self-control model** emphasizes the individual's ability to compensate adequately for body changes, and coping methods for loss of lower limbs, particularly concerning positive body image, while the role function mode covers the individual's ability to fulfill responsibilities as part of the society. In order to gain positive behavior, in terms of the **interdependence**

mode, it is necessary for them to build a relationship and to have a support system to be accountable, particularly in the family. Through these lived experiences of amputated individuals, this research

aims to provide the integrity of the developmental information of attention and care.

Conceptual Framework

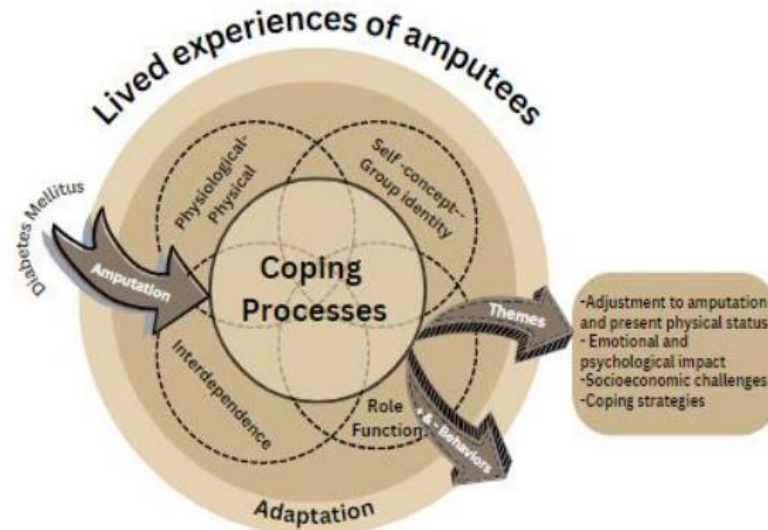


Figure 2: Diagram of Amputees' Lived Experiences Adapted from Sister Callista Roy's Theory of Adaptation

The theory of Sister Callista Roy depicts the adaptation theory, which is relevant to the study as amputees tend to grow and adapt to the environment. The "stimuli" in the diagram above represent the cause of the patient's amputation, which is diabetes mellitus. To represent how diabetes mellitus became the cause of amputation, the word "amputation" is next to "diabetes mellitus." The arrow from the amputation points to the center of the diagram to show the connection they have. The "lived experiences of the amputees" are above all of the modes (physiological-physical, self-concept-group identity, role function, and interdependence) and coping strategies to represent their experience after amputation. With this, the "behavior" of the participant comes after the lived experience of the participant, which also stems from the participant's coping processes. The behavior is divided into two categories: negative and positive. The "themes" that emerged from the experiences of the participants also come out as a result, which are the following: adjustment to amputation and present physical status, emotional and psychological impact, socioeconomic challenges, and coping strategies. The word "adaptation" surrounds the diagram, which represents how the participants handled their experiences after amputation. This diagram is adapted from the theory of Sister Callista Roy, where stimuli are present that cause amputation that affects the participants' daily lives. In this way, there is a change in the behavior of the participant.

Statement of the Problem

Central Questions

1. What is the essence of the lived experiences of below-the-knee amputees related to diabetes mellitus?

Corollary Questions

1. How would the participants describe their experiences as being below-the-knee amputees related to diabetes mellitus?

2. What themes emerged based on the qualitative data gathered from the experiences of below-the-knee amputees?

3. Based on the results of the study, what support programs may be proposed for below-the-knee amputee diabetic patients?

Assumption of Study

1. Amputation is associated with reduced quality of life.

Scope and Delimitations

This study's general objective is to look into the lived experiences of people with below-the-knee amputation related to Diabetes Mellitus in San Pablo City, Laguna. It focused only on the lived experiences of people with below-the-knee amputation, and not on other types of amputation. This study is limited to five participants, who do not represent the whole population and the experiences of those with below-the-knee amputations, the

reason that other amputees have different cases and causes of amputations, and some are reluctant to participate in the interview. At the same time, the locale of this study only focused on amputees who reside in San Pablo City, Laguna, therefore, the results may vary from other locales. The researchers' choice of participants and locale is also based on a limited-time framework.

Methodology

Research Design

Qualitative with an interpretative phenomenological analysis

Participants/Respondents of the Study

People with below-the-knee amputation related to diabetes mellitus who reside within the barangays of San Pablo City, Laguna. A minimum of five participants who are diabetic mellitus people and are amputated were chosen selectively to determine their lived experiences as people with below-the-knee amputation.

Instrument/s of the Study

The researchers used self-made guide questions based on the theory and literature they used. The collection of the data is through face-to-face interviews and it was recorded through an audio recorder.

Data Collection and Analysis

This study explored in detail the lived experiences of the participants involved, which were five below-the-knee amputees related to diabetes mellitus who reside within the barangays of San Pablo City, Laguna. In determining the participants, this study used the purposive sampling technique, non-probability sampling specifically, since it was selected based on the participants' characteristics that are relevant to the study and the objectives of the research.

A. In the data gathering procedure

The researchers try to find the participants from: the researcher's friends, classmates, family, Facebook, Google Forms, hospitals, and rehabilitation centers. The researchers tried a Google Forms online survey, which ended up having one participant, and from posting, they gained two participants from Facebook. The researchers also gain one from personal peers and one from the rehabilitation center, and they end up with five participants in all. The interpretative phenomenological analysis approach was the design used in this study, which sought useful information and investigated feelings, perceptions, and experiences caused by amputation in these participants. To evaluate the lived experiences of people with below-the-knee amputation related to diabetes mellitus, the researchers used self-made guide questions based on

the theory and literature they used.

All of the researchers interviewed the participants in a face-to-face manner, all of whom resided within San Pablo City's respective barangays. They interviewed them one-on-one through face-to-face interviews with a key informant through the use of an audio recorder after the signing of consent forms. A thorough interview with participants is done to get an in-depth analysis. The researcher understands that the participant's personal information was not entered on the provided forms to maintain data privacy. Transcriptions of the personal interviews are removed of any personal information. It is anticipated that some themes might be difficult to talk about, but respect for human dignity was considered, and the researchers have taken special precautions since the participants are a part of a vulnerable population.

For the transcription of this interview, the researchers used verbatim transcription, in which every verbal sound in the interview that was captured on the audio recording is recorded. After the interview, the researchers followed up with the participants with questions, like how they were doing right after they had conducted the interview. Apparently, the interview conducted had not caused any negative consequences or concerns with the participants' emotional or psychological health.

In transcribing the participants' responses, the data was then organized into categories based on the interviewer's questions. Inductive coding was used by the researchers, in which the codes were generated after the collection of data, to prevent bias. That emphasized and highlighted the important data by frequencies, similarities and differences, patterns, magnitudes, etc., then utilized this as a guide to create the initial codes, which serve as the coding. Through the use of holistic coding, in which the single data points from different participants are interconnected to understand the bigger picture and construct a larger unit.

The data intercoder constructed sub-themes and major themes based on the participants' responses as well as post-situational processes in the situation where the participants showed the impact of the amputation and its effect on their lived experiences. To be able to come up with sub-themes, the intercoder used affective coding, in which emotions, values, or conflicts are used to generate a code, which is the first step of the cycle of coding. To highlight and differentiate the responses of the participants, color coding was used by the intercoder, which is the second step of the coding, the pattern coding.

Each question comes up with a different initial

concept, within which it has been organized and categorized. Then it was sent through the intercoder after the researchers had classified and organized the responses. The researchers formulated a diagram that serves as a visual representation of the themes that were developed, which includes the study's objectives and purpose of major themes (adjustment to amputation and present physical status, emotional and psychological impact, socioeconomic challenges, and coping strategies). It is included in these the sub-themes (reduction of routinary functional independence, changes in lifestyle, the feeling of inadequacy and worthlessness, temperament traits and mood swings, social isolation or social approval, economic setback, financial challenges, self-consolation or self-empowerment, family, friends, and community support and attitude, and lastly strong faith and trust in God).

B. In the data analysis procedure

the researchers provided observations and analyzed the highlighted responses to each question in the table, to develop central ideas from them, and evaluated the observations created. As well as to analyze the data in the table, the researchers used open/descriptive coding, which summarized the basic topic of each segment of data that was gathered through interview, observation, and transcription. At the same time, the researchers analyzed the data personally. The analysis focused on the responses' similarity and their relationship to the themes generated. After that, the responses and their relation to the review of literature were given importance by connecting the similar and opposite responses to the literature, and lastly, the researchers identified the implications for theory, research, and practice. The analysis was connected to the literature and theory as support.

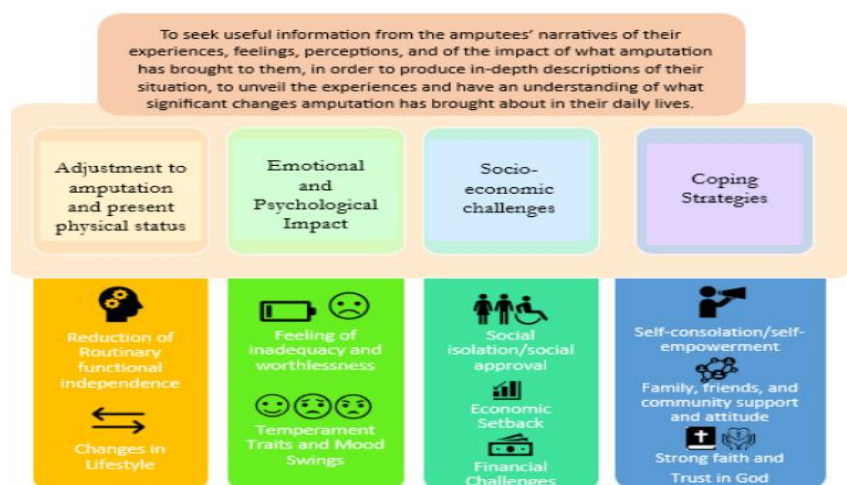
Another analysis that was made of the major and sub-themes was identified in the table. From the themes that were generated, which are major themes (superordinate) and sub-themes (subordinate), they have been analyzed and interpreted in relation to both literature studies as well as nursing theory.

In this study, triangulation was used to have an expound understanding of the phenomenon, as this uses various methods or data sources in qualitative research (Patton, 1999). This data triangulation has been a tool to make the data sources valid, and the findings that can be produced or any weaknesses that can be found would thereby be reduced from other strengths of the data sources, making it an approach to having a conclusion without any false interpretations.

Ethical Considerations

The participant's personal information was not entered on the provided forms to maintain data privacy. Transcriptions of the personal interviews are stripped of any personal information. Documents with data encryption were used to secure transcripts. To ensure that the questions would not harm the participants psychologically, they were validated by three professionals. Complete informed consent was obtained before the audio recordings of personal interview sessions were made. Individual participants were asked to sign the consent; however, if the participant is illiterate, witnessed oral consent will be used. It is anticipated that some themes might be difficult to talk about, but respect for human dignity was considered, and the researchers have taken special precautions since the participants are a part of a vulnerable population. If the participant chooses at any instance that they do not want to answer the questions or continue, they are not forced to do so, and the interview is stopped immediately.

Results and Discussion



Results

The themes that emerged from the qualitative data gathered are essential to communicating the idea to the respective audiences and narrating the experiences, sentiments, viewpoints, and effects this amputation had on these individuals. The themes developed dealt with the amputees' adjustment to amputation and their current physical condition, its emotional and psychological impact, the socioeconomic challenges they face, and their coping strategies. Overall, it demonstrates that their regular functional independence has decreased due to the effects of amputation. Both undesirable and beneficial changes were made to their way of life to adjust to the situation. The amputees felt a sense of inadequacy and worthlessness, which also reflected their mood swings and temperamental characteristics. They felt socially isolated in terms of their social status, and they suffered financially as a result of economic setbacks. Based on the findings, the majority of them rely on self-empowerment, but their family, friends, and community still have a significant impact on them as their support system. These changes and challenges they experienced led them to develop coping strategies, and they developed coping techniques that helped them manage. As a result of their reliance on their faith and trust in God, they also continue to project a sense of strength and confidence.

Discussion

Amputation is a life experience that no one prepares for, yet one must be prepared for it. This is a life-changing event that burdens a person yet teaches. If one has not prepared to prevent it, then being prepared to face the changes caused by it will help one cope with it. Every amputee has a different experience and is a unique individual. The findings indicate that more of the amputees rely on their families for their needs and not on programs supported by the private and public sectors. These people experience socioeconomic challenges and emotional and psychological impacts, causing them a lot of stress. The findings emphasized the importance of having financial support and health promotion activities. The participants' strength lies in their family members and their ability to communicate their needs to them.

Dr. Eric's study (2021) highlights the detrimental impact of lower limb amputation on patients' quality of life, leading to psychological issues and decreased life satisfaction. Factors influencing adaptation to the new physical condition include depression, anxiety, positive affectivity, social support, and a sense of cooperation. Sister Callista Roy's adaptation model underscores the need for individuals to adjust across different modes, emphasizing self-control, role-function, and

interdependence. Crocker et al. (2021) found that diabetic patients undergoing amputation face physical, psychosocial, and financial challenges, necessitating adaptation and growth. Coffey (2009) emphasizes the emotional distress faced by amputees due to diabetes, highlighting the importance of holistic care and socioeconomic support in building self-esteem and achieving life satisfaction. Participants' coping strategies often involve faith, family support, and socioeconomic adjustments, reflecting adaptation and resilience. These findings align with Sister Callista Roy's theory, emphasizing the role-function mode and the importance of establishing supportive relationships for enhancing quality of life despite amputation.

Emphasizing the significance of these outcomes involves recognizing amputees' relationships with themselves. Understanding these relationships aids in identifying strengths and weaknesses, facilitating more effective self-care practices. The implications underscore the need for a comprehensive approach to supporting below-the-knee amputees with diabetes mellitus, addressing their physical, emotional, psychological, and socio-economic needs. Through such efforts, healthcare providers, communities, and governments can collectively enhance the overall well-being and quality of life of individuals coping with limb loss.

The study's findings might not show all the ways amputation affects amputees' lives or all the ways they cope with it. To fix this, we need more people in the study who can share their experiences. Adding more participants can help us understand better how amputation impacts different people and what helps them deal with it. This way, we can get a clearer picture of what amputees go through and figure out better ways to support them.

Conclusion

Amputation is seen as a life-changing procedure; therefore, the researchers' assumption is that amputation is associated with a reduced quality of life. Alongside this data, the main themes that emerged from the data collection for this study are adjustment to amputation and present physical status; emotional and psychological impact; socioeconomic challenges; and coping strategies. The results from this study conclude that adjustment to amputation and present physical status are related to the participants' struggles in their daily lives with factors such as a reduction in routinary functional independence. The emotional and psychological impact on the participants is seen as a devastating feat, giving them feelings such as emptiness and worthlessness, anxiety, and depression, along with the presence of socioeconomic challenges such as social isolation and financial challenges. Contrary to

the study's assumption, the participants' coping strategies enable them to deal with their circumstances and, as a result, improve their quality of life. An example of these things is self-consolation, family support and attitude, and strong faith and trust in God. However, how they process changes and life events will still be determined by how well they are able to accept the circumstances and move forward. As it has been demonstrated that their ability to deal with the circumstances at hand has a stronger influence on their emotional and psychological well-being.

Recommendations

This study only aimed to determine the lived experiences of below-the-knee amputees due to diabetes mellitus in San Pablo City, Laguna. Based on the collected data and analyzed results, the following recommendations are proposed:

Amputees

The amputees should gather additional studies and explore other resources. They should strive to increase their physical activities, enhance socialization and relationships with others aside from their family, and associate themselves with and participate in spiritual activities such as mass. The continuity of their activities before amputation could help them regain their independence and self-concept. Nevertheless, despite the situation, the participants should have the ability to encourage themselves and learn to accept their condition gradually. Even though they were dependent on their family members, they should focus on their own strengths, believe in their ability to do things, and not be limited by other factors.

Families of Amputees

The participants' families should help the amputees develop a positive mindset; thus, they should recognize the significance of their acceptance and their roles as the provider of support. Families should provide some light to the amputees on the challenges and effects that accompany amputation. This emphasizes the importance of fostering a supportive environment that encourages acceptance and understanding within families, as well as providing resources to enhance their ability to support the amputee. Encouraging social integration, promoting inclusive activities, and providing opportunities for amputees to engage with others can mitigate feelings of isolation and enhance their overall social well-being. The researchers advise the family to actively listen while receiving education about how to care for an amputee relative. Lastly, the researchers recommend that they should help the amputee develop mechanisms and strategies to cope with the situation.

Nurses and Rehabilitation Team

The researchers recommend to the healthcare team - the nurses and rehabilitation team - the study of the lived experiences of the amputees and what coping strategies, needs, and support they need to attend to. Encourage the amputees to participate in support groups that provide education on coping strategies and facilitate access to assistive devices and rehabilitation services. They should refer them to healthcare professionals, who should prioritize mental health support and counseling services to help individuals cope with the emotional consequences of their condition. By addressing their emotional well-being, healthcare providers can enhance the overall quality of life for amputees and help them adjust to their new reality more effectively.

Community and Barangay Health Workers

Community organizations should be aware of the amputee's condition and recognize the importance of providing support to these individuals. They should provide needed aid and a solution for rebuilding the status of amputated patients in the community in terms of their physical, psychological, emotional, and socio-economic needs. By offering access to employment opportunities, financial resources, social support networks, and health services tailored to the specific needs of amputees, their overall well-being can be significantly improved.

Future Researchers

This study could be used as one of the foundations for generating new theories and helping them have existing academic support for their theories. The researchers recommend that future researchers use another approach in their research that expands the knowledge of others about the impact of amputation on the lives of amputees and what strategies are helpful for these people. They can also use a different case and cause of amputation to explore the experiences, feelings, and thoughts of other amputees. At the same time, future researchers should gather more participants to represent the study. These multidimensional approaches could support the needs of below-the-knee amputees with diabetes mellitus and hence improve their overall well-being and quality of life.

Acknowledgments

The authors would like to extend gratitude to the University for the support us in their research work.

Conflicts of Interest

The authors declare there are no significant competing financial, professional, or personal interests that might have influenced the performance or presentation of the work described in this manuscript.

References

1. Adepoju, P. (2020). Africa turns to Adams CT, Lakra A. Below Knee Amputation. [Updated 2022 Sep 17]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK534773/>
2. Alessa, M., Alkhalaf, H. A., Alwabari, S. S., Alwabari, N. J., Alkhalaf, H., Alwayel, Z., & Almoaibed, F. (2022). The Psychosocial Impact of Lower Limb Amputation on Patients and Caregivers. *Cureus*. <https://doi.org/10.7759/cureus.31248>
3. Amputation (n.d.). Retrieved from <https://www.collinsdictionary.com/dictionary/english/amputate>
4. Amputation (2021). Johns Hopkins Medicine, based in Baltimore, Maryland. <https://www.hopkinsmedicine.org/health/treatment-tests-and-therapies/amputation>
5. Azarmi, S., & Farsi, Z. (2015). Roy's Adaptation Model-Guided Education and Promoting the Adaptation of Veterans with Lower Extremities Amputation. *PubMed Central (PMC)*. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4640056/>
6. Bacila, C., Fleaca, R., Gherman, C., Mohor, C., Moisin, A., Sabau, D., Tanasescu, C., & Tanasescu, D. (n.d.). Risk assessment of amputation in patients with diabetic foot. *PubMed Central (PMC)*. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9748709/>
7. Batten, H., Lamont, R., Kuys, S., McPhail, S., & Mandrusiak, A. (2019b). What are the barriers and enablers that people with a lower limb amputation experience when walking in the community? *Disability and Rehabilitation*, 42(24), 3481-3487. <https://doi.org/10.1080/09638288.2019.1597177>
8. Bhandari, P. (2022b). What is Qualitative Research? Methods & Examples. Retrieved from <https://www.scribbr.com/methodology/qualitative-research/>
9. Caballero, A. E. (2018). The "A to Z" of Managing Type 2 Diabetes in Culturally Diverse Populations. *Frontiers in Endocrinology*, 9. <https://doi.org/10.3389/fendo.2018.00479>
10. Çamur, S., Batibay, S. G., & Bayram, S. (2020). Effect of lower extremity amputation on caregiving burden in caregivers of patients with diabetic foot: Prospective cohort study. *International Wound Journal*, 17(4), 890-896. <https://doi.org/10.1111/iwj.13342>
11. Caffrey, M. (2020, July 30). Diabetic Amputations May Be Rising in the United States. *AJMC*. <https://www.ajmc.com/view/diabetic-amputations-may-be-rising-in-the-united-states>
12. Casciato, D. J., Yancovitz, S., Thompson, J., Anderson, S., Bischoff, A., Ayres, S., & Barron, I. (2020). Diabetes-related major and minor amputation risk increased during the COVID-19 pandemic. *Journal of the American Podiatric Medical Association*. <https://doi.org/10.7547/20-224>
13. Chaiban, L., Benyaich, A., Yaacoub, S., Rawi, H., Truppa, C., & Bardus, M. (2022). Access to primary and secondary health care services for people living with diabetes and lower-limb amputation during the COVID-19 pandemic in Lebanon: A qualitative study. *BMC Health Services Research*, 22(1). <https://doi.org/10.1186/s12913-022-07921-7>
14. Choong, M., Chau, T., Chy, D., & Ross, A. (2018). Case Report: Clinical management of quadriplegia in low and middle-income countries: a patient's road to physiotherapy, prostheses and rehabilitation. *PubMed Central (PMC)*. <https://doi.org/10.1136/bcr-2018-225171>
15. Crocker, R. M., Palmer, K. N., Marrero, D. G., & Tan, T. W. (2021). Patient perspectives on the physical, psycho-social, and financial impacts of diabetic foot ulceration and amputation. *Journal of Diabetes and Its Complications*, 107960. <https://doi.org/10.1016/j.jdiacomp.2021.107960>
16. *Early prevention of complications linked to diabetes for the prevention of amputation.* - Google Zoeken (2018). <https://www.google.com/search?q=Early+prevention+of+complications+linked+to+diabetes+for+the+prevention+of+amputation>
17. Felipe, R. R., & Plata-Que, M. T. (2021). Predictors of Outcomes of Foot Ulcers among Individuals with Type 2 Diabetes Mellitus in an Outpatient Foot Clinic. *Journal of the ASEAN Federation of Endocrine Societies*, 36(2). <https://doi.org/10.15605/jafes.036.02.14>
18. Geiss, L. S., Li, Y., Hora, I., Albright, A., Rolka, D., & Gregg, E. W. (2019). Resurgence of Diabetes-Related Nontraumatic Lower-Extremity Amputation in the Young and Middle-Aged Adult U.S. Population. *American Diabetes Association*. <https://doi.org/10.2337/dc18-1380>
19. Godlwana, L., Stewart, A., & Musenge, E. (2020). The effect of a home exercise intervention on persons with lower limb amputations: a randomized controlled trial. *Clinical Rehabilitation*, 34(1), 99-110. <https://doi.org/10.1177/0269215519880295>
20. Harding, J. L., Andes, L. J., Rolka, D. B., Imperatore, G., Gregg, E. W., Li, Y., & Albright, A. (2020). National and State-Level Trends in Nontraumatic Lower-Extremity Amputation Among U.S. Medicare Beneficiaries with Diabetes, 2000-2017.

- American Diabetes Association. <https://doi.org/10.2337/dc20-0586>
21. Henley, L. (2020). Assistive Technology and Devices. Limbs4life. <https://www.limbs4life.org.au/funding/assistive-technology>
22. Heri, E. (2022). "Factors affecting Quality of Life post lower limbs amputation – A multicenter cross-sectional study in Rwanda." http://dr.ur.ac.rw/handle/123456789/1664?fbclid=IwAR0dLNdFeWk7QXSDPqTkO5zLW4PPt5eyD-QEe4zXcukxHZk_zKDIvZimmic
23. Imeni, M., Sabouhi, F., Abazari P. & Iraj, B. (2018). The Effect of Spiritual Care on the Body Image of Patients Undergoing Amputation due to Type 2 Diabetes: A Randomized Clinical Trial. *Iran J Nurs Midwifery Res.*, 23(4), 322-326. doi: 10.4103/ijnmr.IJNMR_113_15. PMID: 30034495; PMCID: PMC6034524.
24. Kav, S. (2017). Self-efficacy, depression and self-care activities of people with type 2 diabetes in Turkey. *Collegian*. <https://www.sciencedirect.com/science/article/abs/pii/S1322769615000827>
25. Kissiwaa Amoah V. M., Anokye, R., Acheampong, E., Dadson, H. R., Osei, M., & Nadutey, A. (2018). The experiences of people with diabetes-related lower limb amputation at the Komfo Anokye Teaching Hospital (KATH) in Ghana - *BMC Research Notes*. BioMed Central. <https://doi.org/10.1186/s13104-018-3176-1>
26. Kizilkurt, O. K. (2020). Quality of life after lower extremity amputation due to diabetic foot ulcer: the role of prosthesis-related factors, body image, self-esteem, and coping styles. *Dusunen Adam: The Journal of Psychiatry and Neurological Sciences*. <https://doi.org/10.14744/dajpns.2020.00070>
27. Lasanthi, K., Somarahna, R., Ranathunga, R., Wickramasinghe, W., De-Silva, B. S. S., & Marikar, F. M. (2021). Understanding Experiences of Young Adult Males with Below-Knee Amputation. *Philippine Journal of Nursing*, 30-38. <https://pesquisa.bvsalud.org/portal/resource/pt/wpr-882164?fbclid=IwAR2eBKLvRIO2nzBwd5Dn4ez00xbRjQwpjH1SGDYxLCBLXYkbjfCpxrtHge0>
28. Chaiban, Lea (2022). Access to primary and secondary health care services for people living with diabetes and lower-limb amputation during the COVID-19 pandemic in Lebanon: A qualitative study. Retrieved from <https://link.springer.com/article/10.1186/s12913-022-07921-7#Sec2>
29. Life after amputation: A case study (n.d.). Digital Object Identifier System. <https://doi.org/10.35974/isc.v7i1.1139>
30. Life Experience (n.d.-b). In *The Merriam-Webster.com Dictionary*. Retrieved from <https://www.merriam-webster.com/dictionary/life%20experience>
31. Makai, G., Rátvai, E., Veszely, J., Pethes, B., & Kiss, E. C. (2019). Resilience in Patients with Diabetes-Related Lower Limb Amputation. *Resilience in Patients with Diabetes-Related Lower Limb Amputation*. <https://openpsychologyjournal.com/VOLUME/12/PAGE/34/#r8>
32. McDermott, A. (2022). Why Is Foot Care Important If You Have Diabetes? Retrieved from <https://www.healthline.com/health/diabetes/diabetes-amputation>
33. McDonald, S., Sharpe, L., MacCann, C., & Blaszczyński, A. (2020). The Role of Body Image on Psychosocial Outcomes in People With Diabetes and People With an Amputation. *Frontiers*. <https://www.frontiersin.org/articles/10.3389/fpsyg.2020.614369/full>
34. McDonald, S., Sharpe, L., MacCann, C., & Blaszczyński, A. (2021). The Role of Body Image on Psychosocial Outcomes in People with Diabetes and People with an Amputation. *Frontiers in Psychology*, 11. <https://doi.org/10.3389/fpsyg.2020.614369>
35. Molina, C. S. (2022). Lower Extremity Amputation. *StatPearls - NCBI Bookshelf*. <https://www.ncbi.nlm.nih.gov/books/NBK546594/>
36. Morgado Ramirez, D. Z., Nakandi, B., Ssekitoleko, R., Ackers, L., Mwaka, E., Kenney, L., Holloway, C., & Donovan-Hall, M. (2022). The lived experience of people with upper limb absence living in Uganda: A qualitative study. *Morgado Ramirez, African Journal of Disability*. <https://doi.org/10.4102/ajod.v11i0.890>
37. Movahed, A. H., Sabouhi, F., Mohammadpour Hodki, R., Mahdavi, S., Goudarzian, S., Amerian, M., Mohtashami, M., Kheiri, M., & Imeni, M. (2021). Corrigendum to "Investigating the effect of meditation on spiritual well being of Type-2 diabetic amputees: A clinical trial study" [*Heliyon* 6 (11) (November 2020) e05567]. *Heliyon*, 7(3), e06508. <https://doi.org/10.1016/j.heliyon.2021.e06508>
38. Nall, R. (2022). Amputation: We answer your most-searched questions. *Healthline*. <https://www.healthline.com/health/amputation>
39. National Diabetes Statistics Report - Diabetes CDC (n.d.). Retrieved from <https://www.cdc.gov/diabetes/data/statistics-report/index.html>
40. Okello, T. R., Magada, S. M., Atim, P., Ezati, D., Campion, A., Moro, E. B., Huck, J., Byrne, G., Redmond, A., & Nirmalan, M. (2019).

- Major limb loss (MLL): An overview of etiology, outcomes, experiences and challenges faced by amputees and service providers in the post-conflict period in Northern Uganda. *Journal of Global Health Reports*, 3. <https://doi.org/10.29392/joghr.3.e2019028>
41. Okurumeh, A. I., Akpor, O. A., Okeya, O. E., & Akpor, O. B. (2022). Type 2 diabetes mellitus patients' lived experience at a tertiary hospital in Ekiti State, Nigeria. *Scientific reports*, 12(1), 8481. <https://doi.org/10.1038/s41598-022-12633-3>
 42. Osborn, C. O. (n.d.). What are the differences between type 1 and type 2 diabetes? Healthline. <https://www.healthline.com/health/difference-between-type-1-and-type-2-diabetes>
 43. Patton M. Q. (1999). Enhancing the quality and credibility of qualitative analysis. *Health Services Research*, 34(5 Pt 2), 1189-1208.
 44. Philippines: Saving feet, one patient at a time. (2019b). World Diabetes Foundation. <https://www.worlddiabetesfoundation.org/news/philippines-saving-feet-one-patient-time?fbclid=IwAR1p9680zPE7qNB0QJyTEJDbzAFrvtuRX380NavOEVC1cvbyGcLmgYC Kb2I>
 45. Quinto, C. J. E., Pamittan, J. M. L., Paraguison C. A. R., Peralta, M. J. B., Perdido, H. M. B., & Ponciano, F.E. (2021b). Challenges Faced by Patients in Undergoing Diabetes Care and Management in the Philippines during the Course of the Covid-19 Pandemic. *International Journal of Progressive Research in Science and Engineering*, 2(9), 1-21.
 46. Quinto, C. J. E., Pamittan, J. M. L., Paraguison C. A. R., Peralta, M. J. B., Perdido, H. M. B., & Ponciano, F.E. (2021b). Challenges Faced by Patients in Undergoing Diabetes Care and Management in the Philippines during the Course of the Covid-19 Pandemic. *International Journal of Progressive Research in Science and Engineering*, 2(9), 1-21.
 47. Rizki, E., Raflis Rustam, & Vendry Rivaldy. (2022). Risk Factors Related Amputation on Diabetic Foot Patients in Dr. M. Djamil General Hospital Padang. *Bioscientia Medicina: Journal of Biomedicine and Translational Research*, 6(5), 1732-1737. <https://doi.org/10.37275/bsm.v6i5.506>
 48. Robredo, J. P. G., & Cembrano, D. L. D. (2022). Out on a limb: living with diabetes in the Philippines during the pandemic. *The Lancet Diabetes Endocrinology*, 10(11), 771-772. [https://doi.org/10.1016/s2213-8587\(22\)00275-3](https://doi.org/10.1016/s2213-8587(22)00275-3)
 49. Imeni, M., Sabouhi, F., Abazari, P., & Iraj, B. (2018). The Effect of Spiritual Care on the Body Image of Patients Undergoing Amputation due to Type 2 Diabetes: A Randomized Clinical Trial. *PubMed Central (PMC)*. https://doi.org/10.4103/ijnmr.IJNMR_113_15
 50. Silva, A. D. M., Furtado, G., dos Santos, I. P., da Silva, C. B., Caldas, L. R., Bernardes, K. O., & Ferraz, D. D. (2019). Functional capacity of elderly with lower-limb amputation after prosthesis rehabilitation: A longitudinal study. *Disability and Rehabilitation: Assistive Technology*, 16(5), 556-560. <https://pubmed.ncbi.nlm.nih.gov/31686579/>
 51. Sister Callista Roy - Nursing Theory (n.d.). *Nursing Theory*. January 27, 2023, from <https://nursing-theory.org/nursing-theorists/Sister-Callista-Roy.php>
 52. Statement of Significance - San Pablo City Heritage Zone (n.d.). <https://sanpablocityheritagezone.ph/statement-of-significance/>
 53. Tarroja, H. G. & Cheng, C. (2019). Quality of life among Filipino amputees after prosthetic rehabilitation at the UERMMMCI Philippine School of Prosthetics and Orthotics Charity Clinic. *Health Sciences Journal*, 29-36, WPRIM. <https://pesquisa.bvsalud.org/portal/resource/pt/wpr-793253>
 54. The Effect of Spiritual Care on the Body Image of Patients Undergoing Amputation due to Type 2 Diabetes. (n.d.). https://www.researchgate.net/publication/325971244_The_Effect_of_Spiritual_Care_on_the_Body_Image_of_Patients_Undergoing_Amputation_due_to_Type_2_Diabetes_A_Randomized_Clinical_Trial
 55. Turner, S., Belsi, A., & McGregor, A. H. (2021). Issues faced by people with amputation(s) during lower limb prosthetic rehabilitation: A thematic analysis. *Prosthetics & Orthotics International*, 46(1), 61-67. <https://doi.org/10.1097/pxr.0000000000000070>
 56. Vasudeva, V., Parr, A., Loch, A., & Wall, C. (2020). What happens to our amputees? The Darling Downs experience. *Journal of Orthopaedic Surgery*, 28(3), 230949902095847. <https://doi.org/10.1177/2309499020958477>
 57. What is Diabetes? (2022). Centers for Disease Control and Prevention. <https://www.cdc.gov/diabetes/basics/diabetes.html>
 58. What is Lived Experience? IGI Global. (n.d.). <https://www.igi-global.com/dictionary/lived-experience/1727>