

# Knee Arthritis related issues among aging population in Indian households

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**Abstract.** Knee Arthritis has emerged as a common ailment among the aging Indian population. Since it significantly influences different day to day activities of the affected person, it asks for an investigation from an ergonomics perspective. There are some studies related to knee arthritis reported in the literature but they are mainly from an occupational health perspective and don't explicitly mention the domestic concerns. Also, there is hardly any study reported on aging Indian population which plays an important role in Indian household context.

This paper acknowledges this gap and tries to look different aspects pertaining to arthritis affected Indian elderly from a domestic perspective. To get a better insight of the problems, a case study based approach was adopted where 5 cases representing different household scenarios have been studied. The paper describes the different arthritis-related symptoms which respondents reported experiencing during their daily work. Then it discusses various daily activities in which they face problems. The paper then discusses different ill-effect of arthritis on the physical and psychological health of elderly and finally concludes with directions for future work to address the related issues.

**Keywords:** Knee arthritis, Aging population, Indian households, Difficult activities, Pain.

## 1 Introduction

In recent times, Arthritis has emerged as a common ailment among the aging Indian population [1]. It occurs due to wearing of joint bones or some immunity related disorders [2]. Different arthritis cases, that are reported, consists of arthritis of elbows, knees, hip or finger joints, etc. But out of these, knee arthritis is one which is the most common among Indian aging population, generally, in their late fifties or above [3].

There are different studies reported on knee arthritis from ergonomics perspective but most of such studies, done on arthritis, deal with occupational health-related issues of workers engaged in some jobs [4], [5]. There has hardly been any study, reported, addressing the problems faced by arthritis affected elderlies from a domestic work perspective in the context of the Indian population. In an Indian household, elderly engage themselves in various kind of domestic routine works which vary in different households according to family income, urban- rural background, number of family members

staying with them, family customs, family occupation, availability of domestic help, etc. Hence, a case study based investigation was done to understand the problems faced by elderly suffering from knee arthritis where several cases representing different Indian household scenarios were studied.

## **2 Method and Participants**

A qualitative approach was taken for gathering data for the study. 5 cases representing five different scenarios have been studied. The case study was done on 3 female and 2 male respondents each for a different scenario. The scenario for these cases has been described below. The study was done between August and October 2017.

*Case 1* - A 58- year old female stays with her husband in her 3BHK flat located on the first floor of an apartment. Both her sons are working abroad. Till a few years back, she had been very active and in spite of having a domestic help, she would prefer doing most of the work herself. She loved gardening and had a hobby of collecting different types of plants. She liked socializing was very enthusiastic about meeting relatives. 3 years ago, she started having pain in one knee which slowly became evident in other knee as well. On thorough medical check-up, she was diagnosed with knee arthritis. For last 6 months, she is almost bedridden. Doctors have advised her for knee replacement.

*Case 2* - A 57 years old businessman stays with his family comprising of his father, wife, son, daughter in law and a grandson. He owns a shop dealing in cloth and dress materials. His day starts with the daily routine work followed by morning walk. When he returns from the walk, he gets ready for the shop. On reaching shop he supervises the cleaning, getting shop ready for the customers. He has to sit on a mattress spread on the ground where the materials are shown to the customer. During customer dealing, he has to climb up to over ceiling storage space where additional stocks are stacked. After customer leaves, the spread material is stacked and rearranged cleaning the platform for next customer. For last two years, he is unable to do his shop work properly because of an arthritis affected left knee. Doctors have advised him not to sit at low heights. Arthritis has also started interfering his other daily routine work.

*Case 3* - A 60- year lady lives in a joint family in a countryside location. She takes care of a variety of jobs and has a very busy schedule. Being the eldest lady in the family, she would do the daily morning rituals and prayers. Then, she would supervise and help the younger female members in the kitchen in cooking that includes cutting of vegetables using the traditional chopping device, making chapattis, supervising the work of domestic help. Being a grandmother, she would also look after her grandchildren. She is also involved in taking care of her newborn grandchild which include the cleaning and bathing, massaging, etc. She was diagnosed with arthritis in the right knee and it has also affected the left leg. She takes heavy doses painkillers to reduce the pain. Doctors have advised her for operation but she is reluctant fearing failure of the operation.

*Case 4-* A 63- year man who has retired from government services a few years ago, is staying with his wife and elder son, daughter in law and their two kids, his two-storied building. He had complaints related to knee pains since his retirement. But he used to go for morning walk, bring the newspaper, milk, vegetable from market without any problem. He would also look after all the official bill payments and bank related works. As the stiffness and pain increased, he has become immobile and can't walk without a walker. Even using a walker, he can't move for long.

*Case 5-* An urban housewife in her late fifties lives with her husband, son, daughter in law and two grandchildren. She used to take care of all the chores alone, inside as well as outside the house as her husband had a touring job. She started having knee related pains after her son's marriage 2 years ago. Now she has such severe pains in her knees that she can't help her family in any work and attributing to that, she has also gained weight.

To get insight about the problems related to above cases, method of unstructured interview was used. Contextual inquiry was conducted and the respondents were observed in their normal work setting. Photographs were also taken to support the findings wherever possible.

### **3 Findings**

#### **3.1 Arthritis-related symptoms experienced**

While investigating various cases, it was found that the respondents experienced different symptoms which obstructed their works. One symptom, which almost everybody reported, was morning stiffness of joints followed by pains when their knees were moved or folded especially while getting up from bed in morning. They also informed about inflammation and redness at the affected joint when they stood or walked continuously. In two cases, pain of shoulder and lower back was also reported which adversely affected the work. Another symptom reported was fatigue. Three respondents reported getting tired quickly while doing light work. On the basis of interaction with respondents, various day to day activities were also identified in which they faced difficulties.

#### **3.2 Difficult activities**

During studies, respondent reported of many activities in which they faced difficulties. Some of the major activities have been mentioned below.

*Getting up from bed in morning-* Since, the respondents, generally experienced the morning stiffness of joints, moving their legs, folding them and getting up by applying pressure is a very challenging and painful job.

*Using Toilets*-This is one of the important daily routine activities where all the respondents faced difficulty. Sitting on the toilet seat and then getting up again is difficult and painful. The situation is worst for two of the respondents using Indian style toilets which requires the person to squat while using it.

*Bathing*- Bathing is another problematic area as reported by four respondents. There are many activities generally involving standing (undressing, dressing) or sitting close to floor (for cleaning long hairs, washing small clothes). The bathroom is also one area where most of the slipping accidents occur as the floor is wet and slippery. Some of the respondents informed about the loss of balance control while moving.

*Dressing up/ getting ready*- Dressing up was also reported to be a big challenge for respondents as it involves a lot standing, bending, moving around at one place, especially for ladies who generally wear ethnic dresses like sarees. For male respondents, wearing shoes or footwear was also identified as a big issue as it generally involves a lot of bending.

*Moving inside house*- Moving inside house involved a lot of different positions. All the subjects reported problems of moving within house. In two cases, the flat was on first floor and the elderly members have to climb up and down the staircases. During the study, two respondents expressed their total inability in moving on their own due to pain and lack of control.

*Working in kitchen*- All female respondent expressed their liking for making food for their loved ones. Also, in spite of the problem, the subjects were observed to do a lot of work by themselves. It was also seen that in two cases, respondents were observed using a traditional cutting device which is typically used sitting on the floor. This was reported to be painful and tiring.

*Using low height furniture*- Three respondents reported that they did not feel much of pain when they lied down on the bed or using proper height chairs. But it was very difficult for them to sit down and getting up from low height furniture like low height stool, sofa set, etc.

*Outdoor work related to house*- Two respondents informed that they used to take care of almost all the outdoor work related to the house like banking, bill payments, grocery, buying vegetables, other shopping, etc. this also included office work where one may have to run from one table to another or stand in a queue. Presently, they have either stopped doing these works or limited such activities because of the ailment.

*Using Transport*- All the subjects reported of difficulties in getting in and, especially, getting out of a car. Using public transport is also a very painful experience. One has to really move fast due to more crowd and less time for embarking and disembarking. The subject also reported about the difficulty they face boarding trains or climbing upper berth in a train. Even using rikshaws is a big challenge.

*Some other activities-* Besides the activities discussed above, there are some other activities as well in which especially female respondents faced difficulties. Two of the respondent used to offer daily prayer to their deity for which they needed to sit on the floor with legs folded which had become very difficult after arthritis. A respondent had a newborn grandchild. Being grandmother, she is very keen about taking care of the baby, play with him take her in lap and move around but it involved a lot of movements and weight carrying and she is unable to do such activities. hence all such desires remain unfulfilled.

This arthritis induced inability and crippling creates a frustration and restlessness and this was also apparent while interacting with respondents. It was observed that arthritis did not only affected the movement and activities but almost every aspect of daily life and had far-reaching consequences.

#### **4 Discussion and Conclusion**

During the study, it was apparent that occurrence of knee arthritis has affected the normal life of the respondents making them helpless and a dependent entity who have to look up to others for every work, something which they don't like at all. They want to be socially active and also contribute in day to day family chores. They want to give their personal attention and care to things. Arthritis induced inability to do any work properly brings monotony and frustration. Fear of inability to do things properly leads to loss of confidence and a feeling of guilt. Slowly people start losing interest in everything and starts keeping themselves aloof and get lonely. This often leads to depression and losing interest in life. Hence, there is compelling need to address the problem that affects the lives to such extreme levels. Hence, different ways were required to be figured out to effectively address the problem.

On the basis of the findings, reported and observed, the problems during different activities could be broadly classified into some broader categories

- Inability of stand for long
- Difficulty in sitting
- Inability of getting up after prolonged sitting
- Difficulty in attaining balance while walking
- Difficulty in carrying load
- Difficulty in commuting
- Inability of sitting and getting up from ground or low height

For most of the problems, many aids are already available but they are not that effective. To assists movements, there are walkers and stick which can help you in walking on flat surfaces as well as climb up the stairs. But the walker requires a lot of space. Also, the stick requires a proper attention while using as there are chances slipping and unbalance. Moreover, there is also a reluctance in using these aids as it makes you look older than your age or make you appear like sick and also there is hardly much of relief in pain. There are of wheel chairs and foldable chairs which help in movement of people who can't stand or walk. But, again it gives a feel of handicap and is difficult to be used

everywhere. Also, there are equipment like braces and knee caps which are not visible externally but facilitates the movement and also improves balanced movement. Other remedies include using commode also reduces the problem related to toilets, provision of grips and handles on walls of washrooms and bathrooms. Addressing the problem from other perspective, we can also reduce the pains by reducing the movements for any work like using online banking, bill payments, online shopping etc. which eliminate the problem of going to various offices and standing in queue. But it reduces their opportunity to go out which further creating monotony and physical immobility. For sitting and getting up from low heights, there is hardly any effective solution available. There are very few solutions available for commuting and carrying loads while walking. The present situation presents opportunities to improve and come up with solutions that much more effective and contextual than existing solutions. It is high time to address these knee arthritis related issues which would not only help our elderly effectively in their day to day life but also help them lead a quality life with dignity.

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