

# DEVELOPING METHODOLOGY FOR ACCESSIBILITY RESEARCH IN RURAL ENVIRONMENTS

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## **SUMMARY**

From the current and past research practices there is enough evidence to understand that disablement process is not just a cause of individual physical limitations but is a consequence of complex interactions between physical, social and institutional parameters within the environment, we live in. However, these research studies are mostly limited to the urban settings of the developed nations which are contextually quite different from the rural settings of the developing nations. While the incidence rate of disabled population is quite high in the rural areas, the domain of disabling environmental experiences in rural settings still remains highly under researched. As a result, it lacks clear methodological directions to pursue research studies leading to some possible ways of improving access to the performance of Activities of Daily Living (ADLs) in their ground contexts. This paper sheds light on methodological directions for accessibility research in rural environments as employed by the author in his doctoral research titled Enabling environments for the Mobility impaired in the rural areas. It highlights the various steps involved in the methodology of this exploratory research and extends a possibility of employing the same for other categories of disabilities in the rural environments.

## **KeyWords**

Accessibility; Disability; Mobility Impaired; Methodology; Rural Environments

## **1. INTRODUCTION**

Indian statistics highlight the demographics of persons with disabilities in the rural areas. Growing economic divides and lacking infrastructure further compound the problems of persons with disabilities in the rural environments. This study conducted as a part of author's doctoral dissertation ideates methodological contributions into the domain of accessibility research for persons with disabilities living in the rural context. As a guiding philosophy, the author believes that improving accessibility scenarios

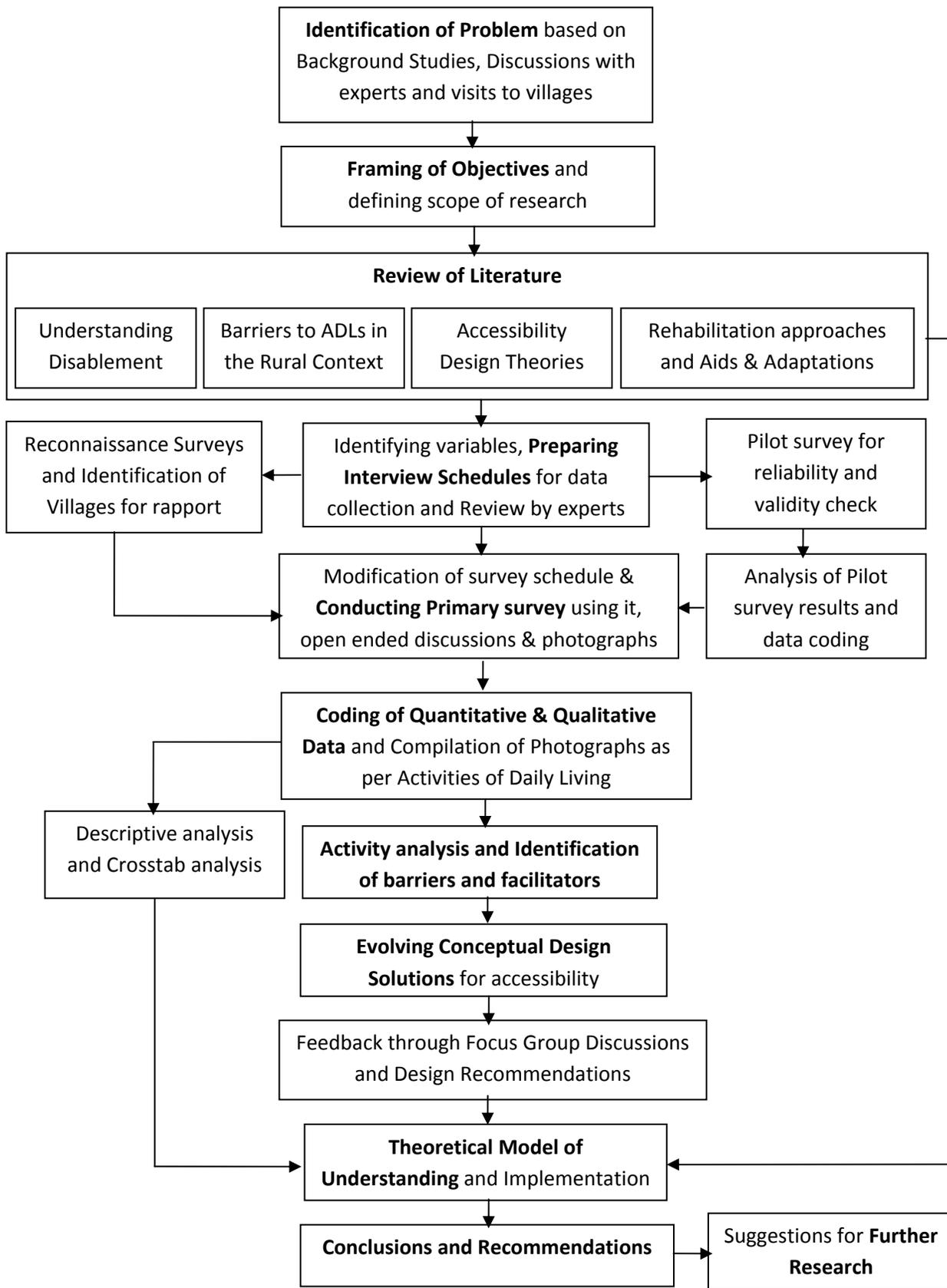
would improve independence and thereby facilitate rehabilitation process. This work in its inception supports the social model of disability and is a conducted qualitative study to understand accessibility issues of persons with mobility impairments in the chosen study area.

The Indian disability census (2001) reports a total of approximately 6 million people with movement disabilities which accounts for 27.87% of the total percentage of disabled people. The background as seen from the census figures reports that out of all persons with movement disabilities, 76.24% live in the rural areas while only 23.76% live in the urban areas. Sen (2006) mentions in her paper these census figures may indicate serious level of undercounting. Balaram (2001) reported that India already has one – third of the world's disabled population. He further adds, 'While an accurate census is difficult due to huge and illiterate village populations, an approximate 63 million people in India suffer from impairment in physical or mental form. Sharma, N (2006) stated that there are 9 million people with locomotor disabilities in India of whom 4 million require mobility devices.

## **2. RESEARCH METHODOLOGY**

In the light of gaining insight into the issues of accessibility, several theoretical aspects of disablement process were reviewed along with other relevant areas for this study. Various research approaches for the rural contexts in the developing countries were also reviewed to finally evolve a research methodology for the present study. Various themes were identified which directly or indirectly affect the independence of the persons with mobility impairments in the performance of Activities of Daily Living. Data thus collected was largely classified as personal and environmental (physical, social and institutional) parameters (Jones, H. et al., 2002). In the absence of reliable tools for conducting study in the naturalistic settings, a multi method approach was found suitable for this research study.

The research methodology is sub divided into phases viz. Identification of study parameters (physical, social, environmental), Data Collection, Survey Schedule, Pilot Study, Photo documentation, Quantitative analysis, Qualitative Analysis, Design, Focus group Discussions [ Fig. 1]. After identification of the research gaps, data collection formed one of the most challenging domains of this work in the lack of secondary data to conduct research at grass root level. Since individual data of persons with disabilities in each village was not available, network sampling was employed to conduct the reconnaissance and the final surveys through a self administered survey schedule. Photo documentation formed an important tool for visual analysis to observe the various ADLs as performed live by the participants with mobility difficulties. his research study employed a survey based methodology leading to the development of a visual documentation process and independent tools to measure disabling experiences.



**Fig. 1 Research Methodology Chart**

### **3. RESULTS AND DISCUSSIONS**

Development of a methodology for researching accessibility issues in the rural context is one of the significant outcomes of this study in addition to the understanding of interrelationships between personal and environmental parameters in play during functioning of ADLs. The key outcomes described results into two major categories viz. Quantitative and Qualitative.

#### **3.1 Quantitative Issues**

Results pertaining to the quantitative parameters viz. personal information, socio economic characteristics, disability parameters, postural limitations and rehabilitation preferences have been documented and discussed in this category. It was found that people with mobility impairments were not being able to contribute much to the economic activity as was considered a normal trend in the rural settings for an able bodied adult. Dependence for economic needs amidst poor economic conditions created a sense of high insecurity among the family members of persons with mobility impairments. A high degree of interest in education was quite evident with some of the respondents and their family members. However, some of the respondents were not able to pursue it because either there was no educational facility in proximity or due to high costs of travelling to a far off distance.

31 respondents were ambulant disabled while 12 were grouped in the category of non ambulant disability. Several types of mobility devices like walking stick, crutches, tricycles were observed, even though 28 out of 43 respondents were not using any mobility aid. Only 1 out of 43 respondents had a wheelchair and 2 of them had developed their indigenous solutions for in house mobility. Mobility aids were not so prevalent due to ineffective distribution strategies, mismatch between their need and the utility of the aid, issues of maintenance and inaffordability at a personal level. Degree of ease or difficulty in various postures viz. standing, squatting, bending, etc. for ADLs were recorded as a perceived experience by the respondents and rehabilitation preferences were recorded on a five point rating scale.

#### **3.2 Activities of Daily Living**

Five major categories of ADLs were investigated in the naturalistic conditions of the rural environments. In addition to the employment of the unipolar, five point Perceptual Experience Rating [PER] scale as conceived by the author, the participants were asked to simulate the ADL performance as they would normally do in their routine. However, the major focus was on the activities of self care and sanitation which included the activity of fetching water, toileting and bathing. The other observed activities included mobility & climbing, transfer, occupational and social participation activities. The ADLs were documented through a photo documentation process to aid understanding into the accessibility and ease of performance. It was clearly observed that personal and environmental factors together compound the problem several times. Also, efforts of rehabilitation through provision of personal assistive aids has not successfully percolated to the grass root levels of need as witnessed in case of several survey respondents. Design interventions seem to be providing an extensive opportunity to be

considered an enabling tool of application to achieve independence in self care and other ADLs.

In the light of above, discussions to explore design relevance with the participants, field observations, comments from family/community members, few design concepts were made which were further taken for feedbacks with a purposively chosen group of respondents along with their family and community members. This is how focus group discussions contributed to the research methodology. It was in the light of proposing conceptual design interventions which could be built as prototypes for a model accessible village.

However, the researcher proposes to write a project to seek funds from the relevant government agency for prototype implementation of these designs which could then be refined with timely feedbacks. Towards the end, a theoretical model was suggested that exhibits the interactive spirit of ADLs and the parameters. This was further supported by a holistic framework of implementation to create accessible environments for the mobility impaired in their rural settings that supports integrated living.

#### **4. CONCLUSIONS**

The study concludes that very little work has been done in the area of promoting accessible environments for the persons with disabilities in the rural areas especially in the developing nations. For inclusion to happen in society, ground realities of persons with disabilities need to be addressed. Improving accessibility in rural built environments would only open greater opportunities for persons with disabilities to participate and achieve independence in performing ADLs.

The methodology so evolved in this study could be further be employed to other disability groups too in order to get a holistic grip on resolving accessibility issues in rural environments. Lack of appropriate methodologies continue as one of the major barriers for advancing research in the context of creating accessible environments for persons with disabilities. This study cum methodology so evolved becomes a preceding ground for other researches to evolve and develop in this direction. While highlighting the methodology developed, it was also realized to develop measurement of disablement process at a rural level where medical assessment is not always an easy possibility.

India being a signatory to the UNCRPD needs a direction to evolve and execute its mandate for improving access for persons with disabilities including other socio economic and socio cultural diversities. There are two ways to approach it, either as an opportunity to contribute positively through research and development and the other to pose it as a stigmatizing issue and provide patch work solutions to long term problems. The methodology discussed above provides a base work to evolve and tailor several possible methodological directions to investigate and solve the problems of accessibility for persons with disabilities in a wider context. After all, accessibility is a means to inclusion.

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