

# Quality of Occupational Therapy Research in India - A Descriptive Review

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## Abstract

**Background:** Occupational therapy (OT) enhances functional independence in the daily activities of people with disabilities and subsequently their quality of life. Research in OT generates evidence to provide safe and effective services to the disabled. However, OT research in India has been shown to have various methodological limitations. These methodological limitations are expected to impact the quality of OT research as well as the evidence derived from this research to inform decision-making in rehabilitation. The majority of the OT research is disseminated and promoted through the All India Occupational Therapists' Association's (AIOTA) annual national conference (ANC). Analyzing the abstracts, selected for the presentation at the ANC could help understand and strategically improve the quality of OT research in India. **Objectives:** To explore and describe the quality of OT research in India. **Study Design:** Descriptive analysis. **Methods:** Descriptive, nonsystematic review and analysis of the key methodological aspects of the conference abstracts submitted for the AIOTA ANC published in the *Indian Journal of OT (IJOT)* from 2017 to 2021 was carried out. Information related to the methodological aspects of the research abstracts was extracted using a data extraction form and the data were synthesized and reported descriptively. **Results:** About 218 abstracts had been selected for either poster or oral presentations in the AIOTA ANC. All the abstracts were included for the review. A total of 8055 participants were recruited for the studies conducted from 2017 to 2021. About 5757 (72%) of the participants were recruited for cross-sectional studies. Nearly 72 (33%) of the abstracts presented were related to cross-sectional studies, 52 (24%) were case studies and 66 (30%) were experimental studies. However, research designs implying highest level of evidence such as systematic reviews were only 4 (2%) and randomized controlled trials were only 9 (4%) with 297 participants. Notably, 203 (98%) of the all the studies evaluating effectiveness of interventions or aiming to investigate associations reported positive results with statistically significant improvements and associations. **Conclusion:** The review provides invaluable information related to the quality of OT research in India. It implies the need to improve the scientific rigor of the evidence generated in relation to OT research in India. This review also implies the need for a radical change and strengthening of OT research within OT education and professional practice in India. National and global OT associations need to prioritize good quality OT research by enhancing the research skills and competencies of OTs in India. This could help promote evidence-based OT science and develop the OT profession in the world's second-most populous country. In addition, it is also expected to encourage those OT researchers who have been striving to build OT research standards in India.

**Key Words:** Disability, Health Systems, Occupational Therapy, Rehabilitation, Research


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## INTRODUCTION

Occupational therapy (OT) enhances functional independence in the daily activities of people with disabilities and

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subsequently their quality of life.<sup>[1]</sup> Research in OT is expected to generate evidence to provide safe and effective services to the disabled and empower them.<sup>[2]</sup> There are several disabling health conditions for which OT has proven to be effective and beneficial.<sup>[3]</sup> These evidence is usually generated in high-income countries (HICs) and is translated into low- and middle-income countries (LMICs).<sup>[4]</sup> Although available, it is not possible to effectively implement this evidence from HICs in LMICs. This is especially because the contexts and health systems differ.<sup>[5]</sup>

As India is the second-most populous country in the world, understandably, the rehabilitation needs, including the OT needs of persons with disabilities are known to be substantial.<sup>[6]</sup> This implies the need for generating good quality research evidence related to disability and OT in India.<sup>[7]</sup> Globally, good quality evidence is defined by its methodological rigor.<sup>[8]</sup> Systematic reviews and randomized controlled trials (RCT) are placed at the highest level of the hierarchy of evidence because of the methodological rigor it possesses to answer a research question.<sup>[9]</sup> Evidence generated from research studies using methods that are flawed are generally considered ineffective and nonimplementable.<sup>[10]</sup> Therefore, it is of significant importance that any research studies should be methodologically rigorous to generate good quality evidence that is effectively implementable.

However, OT research in India has been shown to have various methodological limitations.<sup>[7]</sup> A recent systematic review on the evidence for OT in reducing disability in India had identified that most of the studies included had several methodological flaws.<sup>[7]</sup> These methodological limitations are expected to impact the quality of OT research as well as the evidence derived from this research to inform decision-making in OT practice.<sup>[11]</sup> Majority of the OT research is disseminated and promoted through the All-India Occupational Therapists Association's (AIOTA) annual national conference (ANC). Analyzing the abstracts, selected for the presentation at the ANC could help understand and strategically improve the quality of OT research in India. The objective of the study was to explore and describe the quality of OT research in India during the past 5 years (from 2017 to 2021).

## METHODS

A descriptive, nonsystematic review of the conference abstracts was conducted. All the abstracts published in relation to the AIOTA ANC in the Indian Journal of OT (IJOT) from 2017 to 2021 regardless of their study designs were considered for the review.

### Data Collection and Extraction

The authors retrieved and reviewed all the abstracts that were selected for the AIOTAANC from 2017 to 2021 from the IJOT. Four reviewers independently screened the methods section of these included abstracts. Data extraction was performed using a data extraction form that was specifically developed for the purpose of this review. Each reviewer independently extracted the data from the abstracts. Some of the key components of data extraction included study design, sample size, types of

studies (empirical or nonempirical), outcome assessment, and study results, etc. Two reviewers who were not involved in data extraction verified the data extraction. Disagreements if any were resolved through discussion and consensus.

### Data Analysis and Synthesis

The extracted data were analyzed and synthesized narratively. The reviewers recognized that it is not possible to generate any in-depth inference from the data extracted from abstracts. Hence, it was decided during the conceptualization phase of the review that the data will not be analyzed for any associations or critically appraised. Rather the reviewers planned to describe what was reported in the methods sections of these abstracts.

## RESULTS

Two hundred and eighteen abstracts were identified from the AIOTA ANC abstract publications from 2017 to 2021 in the IJOT.<sup>[12-16]</sup> All the abstracts were included in the review. A total of 8055 participants were recruited for the studies conducted from 2017 to 2021. Disaggregated details are provided in Table 1. Nearly 5757 (75%) of the participants were recruited for cross-sectional studies. Considering the study designs of the abstracts, 72 (33%) of the abstracts presented were related to cross-sectional studies, 52 (24%) were case studies, and 66 (30%) were experimental studies [Figure 1].

However, research designs implying the highest level of evidence such as systematic reviews were only 4 (2%) and RCT were only 9 (4%) with 297 participants. Notably, 203 (98%) of the 207 studies evaluating the efficacy of interventions or aiming to investigate associations reported positive results with statistically significant improvements and associations. Among the 135 studies that evaluated interventions, 84 (62%) of them evaluated OT interventions. The outcome assessments used were standardized outcome assessments in 95 (86%) of the 110 studies. However, only 2 (2%) of these assessments were standardized in India and these assessments were not OT-specific assessments [Figure 2].

## DISCUSSION

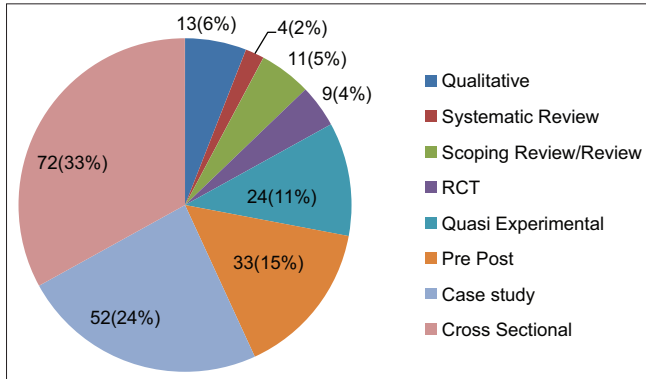
Results from the review highlight the importance of optimizing the use of human participants in OT research in India. Nearly

**Table 1: Sample Sizes and Study Designs of the Research Abstract Submissions**

Types of studies	Sample size, <i>n</i> (%)	Average sample size ( <i>n</i> )	Number of studies ( <i>n</i> )
Cross-sectional	5757 (75)	82	71
Case studies	128 (2)	2	64
Pre-post study	977 (13)	31	31
Quasi-experimental	751 (10)	32	24
RCT	297 (4)	37	8
Qualitative	145 (2)	11	13
Total	8055 (100)		

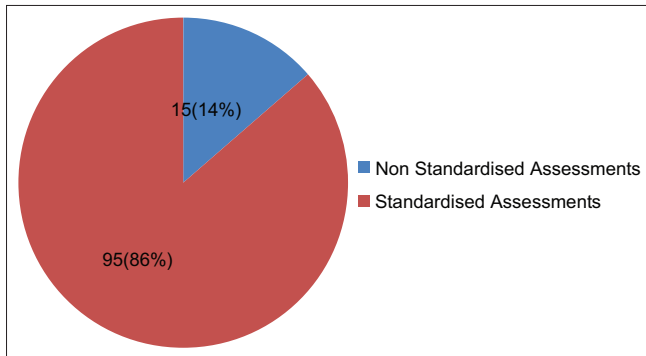
RCT: Randomized controlled trial

**Figure 1:** Study Designs of the Abstracts Submitted to ANC AIOTA.



N=218; ANC: Annual National Conference; AIOTA: All India Occupational Therapists' Association; RCT: Randomized Controlled Trial

**Figure 2:** Outcome Assessments Used in the Abstracts Submitted for the ANC of AIOTA.



N=110; ANC: Annual National Conference; AIOTA: All India Occupational Therapists' Association

8805 participants have been utilized in the past 5 years and nearly 5757 (75%) of these participants have been recruited for cross-sectional studies that investigate an outcome or exposure of interest at a specific point in time.<sup>[17]</sup> Although this study design is less expensive, and it does not require a follow-up, the temporal link between the outcome and exposure of interest cannot be determined using this design.<sup>[18]</sup> Hence, the quality of evidence obtained from this study design is considered low.<sup>[19,20]</sup> The same applies to case studies and case series too, where the demographic characteristics of the case or cases will additionally influence the result of an investigation, and hence, its quality is considered low.<sup>[19,20]</sup> This review identified 124 studies, close to 60% of the research submissions from these two kinds of study designs. On the contrary, this kind of design is essential to understanding the results in relation to the context and time. Given most contributions from OT researchers in India pertain to these designs, the findings from these research designs, if methodologically rigorous, could potentially inform context-specific interventions and strategies for OT professional development.<sup>[21]</sup>

There were only 13 (6%) of research submissions that used the study designs which are rated high quality in terms of the level of evidence such as the systematic reviews and RCT. Although

minimal, if one RCT or systematic review in OT in India, could be specifically designed, powered, and conducted with good methodological standards, the results can be of immense value.<sup>[22]</sup> OT researchers in India have been making significant efforts, building their skills and competencies in high-quality research methods, and these efforts if concerted will certainly help bridge the gaps in evidence-based OT in India. There are several examples of OT researchers demonstrating this globally.<sup>[23]</sup> However, the findings of this review, highlight the need for OT research that is both relevant to the context as well as rigorous in its design to address the paucity of evidence in OT in India. It is of utmost importance that OT research in India must focus on conducting systematic reviews and RCTs to generate high-quality evidence that can effectively inform practice and strengthen health systems.

One of the notable findings from this review is the statistically significant positive results of all the research submissions that were experimental or that investigated associations and relationships between outcomes or exposures of interest in OT. Except for two systematic reviews, almost all the research submissions reported positive statistically significant results. If they were to be true, then one would expect that there would not be any paucity of evidence in OT on those topics investigated and found effective.<sup>[24]</sup> However, on the contrary, a recent systematic review of RCTs that evaluated the evidence for OT in reducing disabilities identified only seven RCTs in the past 20 years but reported a high risk of bias in five out of the seven included RCTs.<sup>[7]</sup>

Although it is not possible to describe the methodological quality by evaluating the abstracts of research submissions, this specific observation implies the need to understand the approach toward designing, implementing, and particularly reporting OT research in India systematically either through primary research or through a systematic review. If the efforts by OTs in India on a specific topic could be brought together, it could obviously increase the power of research and subsequently the generalisability. It would also provide valuable insights to refute conjectures and increase affirmative evidence on any specific OT research that is important for the Indian context. For instance, the recent efforts from World Federation of OT on the OT workforce development strategy through a scoping review included several small studies from HICs as well as very few studies from LMICs. This pooling of study results together has now been optimized to develop the strategies for the OT workforce globally.<sup>[25,26]</sup>

In addition, a significant proportion of the submissions utilized a standardized outcome measure for the research. However, none had used an outcome measure that is standardized for use in India. This implies a critical need to develop standardized OT outcome measures to support context-specific practice and research. It is evident from this review that most of the case studies were conducted for the purpose of development and validation of outcome measures relevant to India. Focused and systematic efforts toward OT-related outcome measure

development and standardization for people with disabilities in India can be very valuable.

This review has several strengths and limitations. To our understanding, this is the first exercise to understand the quality of OT research using the methodological details of research abstract submissions in India. A summative description of the important methodological aspects that inform the level of evidence and the rigor of OT research abstracts submitted for ANC in the past 5 years has been made. This review also highlights the need for improving the methodological quality of OT research in India. As mentioned previously, the authors admit that the methodological quality of the research studies cannot be assessed through its abstracts and that is one of the primary limitations of this review. However, this review has clearly indicated that it is possible to understand the quality of OT research using key details related to the research study methods such as study design, sample size, and the reporting of results. It also highlights the need for optimizing the use of resources including the study participants for improving the evidence base for OT in India. The results of this review can be combinedly used with the results of another review that described the nonmethodological details of these 218 abstracts submitted for the ANC from 2017 to 2021 for gaining in-depth insights about OT research in India.<sup>[27]</sup>

## CONCLUSION

The review provides invaluable information related to the quality of OT research in India. It implies the need to improve the scientific rigor of the evidence generated in relation to OT research in India. This review also implies the need for a radical change and strengthening of OT research within OT education and professional practice in India. National and global OT associations need to prioritize good quality OT research by enhancing the research skills and competencies of OTs in India. This could help promote evidence-based OT science and develop the OT profession in the world's second-most populous country. In addition, it is also expected to encourage those OT researchers who have been striving to build OT research standards in India.

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## Conflicts of Interest

There are no conflicts of interest.

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