

Gap in Nurses' Knowledge and Screening Practice in Identifying Children with Developmental Delay

Rajalakshmi Ramu^{1*}, Radhakrishnan Govindan¹, Preeti Jacob² and Marimuthu Palaniappan³

¹Department of Nursing, National Institute of Mental Health and Neuro Sciences, Bengaluru, Karnataka, India

²Department of Child and Adolescent Psychiatry, National Institute of Mental Health and Neuro Sciences, Bengaluru, Karnataka, India

³Department of Bio-Statistics, National Institute of Mental Health and Neuro Sciences, Bengaluru, Karnataka, India

Abstract

Introduction: Early identification of developmental delay is known to have beneficial impact long term. In low and middle-income countries, nursing professionals are the backbone of the health care system and can be at the frontline in identifying this at-risk population, given their background.

Objective: To understand nursing professionals' knowledge regarding developmental delay and their subsequent screening practices in identifying children with developmental delay as well as to understand the effectiveness of intervention programs which seek to increase knowledge and its impact on subsequent screening practices of nurses.

Study design and Method: An integrative narrative review of literature approach was utilized by reviewing electronic databases from its inception till November 2019. Nurses' knowledge, screening practice in identifying children with developmental delay, need and impact of educational interventions were identified as the primary outcome measures.

Result: Six-hundred and fifty articles were reviewed, out of which 163 articles were found to be relevant and 09 eligible studies were included for this review. The total number of subjects included for these studies were 917. Overall, the studies reviewed showed that nurses had insufficient knowledge about developmental monitoring and inadequate screening practices in the identification of developmental delays in children. Educational intervention programs were seen to have a positive impact on nurses' knowledge and screening practices, as per the studies that were reviewed.

Conclusion: There appears to be a gap in the nurses' knowledge and therefore their ability to effectively screen children who might have developmental delay. Ongoing training programs have a beneficial impact.

Keywords: Developmental assessment; Surveillance; Monitoring; Nurses; Knowledge; Screening Practice

Introduction

Developmental delay is the umbrella term used to characterize children who show the delays in the attainment of milestones in one or more developmental domains [1,2]. Globally every year 180-200 million under-five children exhibit developmental delay [3]. In India, the overall 12.2% of the children were found to have developmental delay [4]. The long term meaningfulness of early identification of developmental delay is currently non-debatable. It has been established over a multitude of studies that early identification and intervention reduces disability and has a salubrious impact on the family and community as a whole [2,5-8]. There are two important methods to elicit developmental concerns in general pediatric practice. These include developmental surveillance and developmental screening. "Developmental surveillance" is the term used to describe the mechanism of elicitation of parental concerns over a period of time, where a developmental history is obtained, observations of milestones are made, and pertinent information is obtained from the child's caregivers in cases where there are already concerns regarding the child's development [9]. Developmental screening, on the other hand, refers to periodic administration of standardized tools to enhance early detection and improved health and learning outcomes for all [10,11]. The hope is that developmental screening and surveillance when applied together in a population will identify most children at risk for developmental delays.

The American Academy of Pediatrics (AAP) recommends developmental surveillance of high-risk children at each health visit from birth to 3 years, and routine screening of low-risk children at 9th, 18th and 24th/30th months or earlier if concerns are elicited [11-13]. However, in low and middle-income countries (LAMIC), in most health care settings, children are treated for specific need-based illness or routine immunizations [14]. Monitoring for their developmental

appropriateness is not done until the parents express such a specific concern [15]. In India, pediatricians are busy, short-staffed and overwhelmed by childhood illnesses it-self that developmental screening and surveillance may not be priorities. Pediatricians have also expressed inexperience in using screening tools meant to assess development [16]. Other aspects such as time involved in screening, training needs to apply screening instruments as well as the cost involved in purchasing these tools are barriers to their routine use in clinical practice, [13,16,17]. Given the limitations in undertaking developmental screening and surveillance by pediatricians alone, Jaisoorya suggested the possibility of these services being offered by nurses post-training in well-baby and immunization clinics-a bottom-up approach [18]. The Government of India has also incorporated this bottom-up approach in a programme called the Rashtriya Bal Swasthya Karyakram [18,19] under the National Health Mission. In this program, all primary and secondary healthcare centres will be equipped for early identification and intervention programmes to address the 4 Ds-Deficiencies, Defects, Disorders, and Developmental Delays [20]. The functionaries of this program include anganwadi workers, teachers, nurses and doctors [1,20,21].

There seems to be an information gap between health professionals such as nurses and parents of children with developmental delays which

***Corresponding author:** Rajalakshmi Ramu, Department of Nursing, National Institute of Mental Health and Neuro Sciences, Bengaluru-29, Karnataka, India, Tel: 9742013999, E-mail: radhikanmj@gmail.com

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may exist due to a limited knowledge base and awareness of normal child development process, developmental monitoring and screening [15]. Thus, this information gap may translate into a communication gap and may postpone the early identification of children with developmental delay and disability [15]. There is evidence that suitable tutoring and training in child development and early identification of developmental issues improved the nurses' knowledge, subsequent practice and further changed their attitude to health care service towards children [22,23]. While this information that is known, ground realities are often times different from what is expected or required. This study is an attempt to look at extant literature in the area of nurses' knowledge and their screening practices with children so that such gaps in their training may be addressed by governments and by policies and programs that train nurses specifically.

Methodology

The integrative narrative review approach was adopted for the present study. The inclusion criteria included full-text articles published between 1990 and 2019 and focused on nurses' knowledge about child growth and development, screening, developmental delays, and educational interventions to improve the nurses' knowledge towards child development and screening children with developmental delays. PubMed, MEDLINE, Google Scholar, Psych INFO, Pro-Quest, EBSCO, JAMA, and Cochrane Database of Systematic Reviews, along with grey literature and conference proceedings were searched by using the keywords such

“knowledge”, “attitude”, “screening practice”, “developmental screening”, “developmental assessment”, “surveillance”, “developmental monitoring”, “under-five children”, “effectiveness of “training”, “workshops”, and the “continuing nursing educations” and “nurses”. Further, the authors have identified some articles from reference lists of reviewed articles. Totally 650 articles were reviewed, out of which 163 articles were found to be relevant to the present research title. Nine eligible full-text articles were included in the study (Quantitative, Experimental: 07, Qualitative: 02). The number of nursing professionals included in these studies were; n=917. Collected articles were analyzed for their positive points and restrictions through the critical analysis which was done.

Results

Interpretation of integrative summary

The articles were examined and assembled according to the following classifications: (i) Nursing professionals' knowledge, attitude and practice in identifying children with developmental delays (ii) Impact of educational interventions to improve the nurses' knowledge and screening practice in identifying the children with developmental delays. The authors' found 09 full-text articles based on the objectives. The number of studies related to nurses' knowledge and screening practice in identifying children with developmental delay was four, and the impact of an educational intervention for the same was five. The results have been depicted in Figure 1 and Table 1.

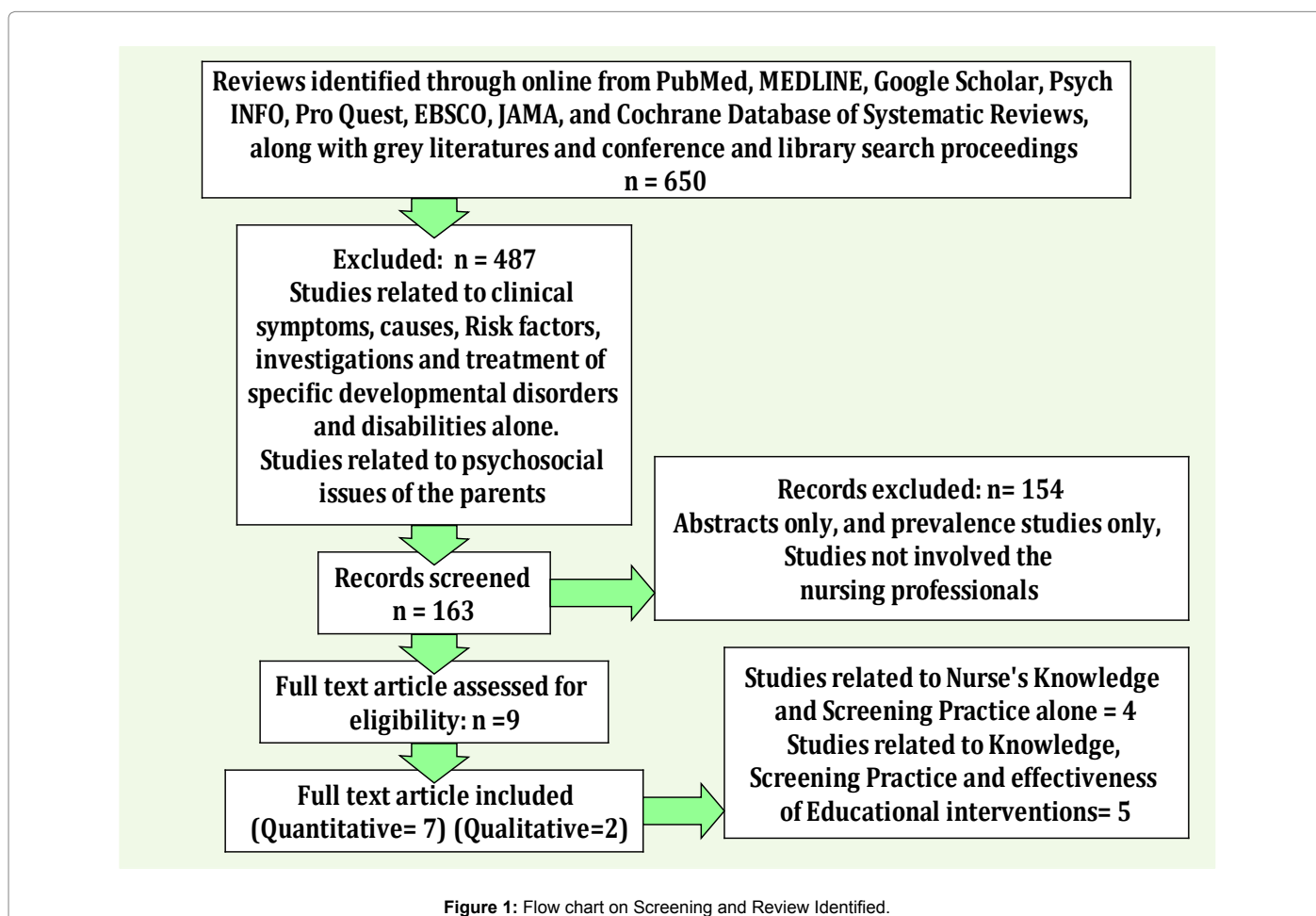


Figure 1: Flow chart on Screening and Review Identified.

Table 1: Result Based on Critical Analysis of the studies.

Author and Year	Design	Participants	Educational Intervention	Purposes	Key findings
Gillis [24]	Quantitative Descriptive cross-sectional survey design	(n=238) Pediatric nurses	Nil	To elicit pediatric nurses' knowledge regarding growth and developmental monitoring	Professional education alone was not sufficient. Continuous clinical practice and workshops, seminars and training programmes are essential to improve nurses' skills.
Ford et al. [25]	Quantitative Descriptive cross-sectional survey design	(n=309) Nurse practitioner	Nil	To ascertain nursing practitioners' (NP) knowledge and management skills in providing care to children with developmental delay and developmental disorders.	NP's who had continuous education had fair to good knowledge about various instruments used to ascertain developmental delays and disorders. Educational qualification and access to ongoing education was found to be the difference in identifying and managing children with developmental delay and disorders
Pizolato et al. [26]	Qualitative, Explorative design	(n = 11) Nurses	Nil	To ascertain nurses' knowledge of child language development.	Nurses asked for more information about the child's language development, its deviations, and parental guidelines to promote child language development. Nurses were ready to undergo further training to improve their knowledge towards the child's language development,
Garg et al. [9]	Qualitative, Explorative design	(n=22) nurses and nurse practitioner	Nil	To identify the primary health care providers' knowledge regarding screening tools and their attitudes, and barriers to conducting developmental surveillance	Obstacles and barriers to conducting developmental surveillance were discussed by the nurses. These hurdles included having access to the parents during a child's routine health check-up due to restrictions imposed by a lack of transport and hospital timings. Researchers identified that health professionals had less knowledge about the screening tools as well
Figueiras et al. [27]	Quasi-experimental study Design	n = 132 Nurses	Continuing Education Program on Developmental Screening for nurses	To understand the extent of knowledge on developmental screening among health professionals including nurses, and to evaluate the effectiveness of continuing education programmes on child developmental screening and its practice	Participants had insufficient knowledge regarding developmental screening before the continuing education programme. The educational program had improved nurses' knowledge. Additionally, after the educational programme, mothers reported that physicians and nurses spent more time to observe, screen and discussed child stimulation
Ahmed [28]	Prospective pre-post design	n=125, Senior nursing students	An educational programme geared towards growth and development	To assess the knowledge about growth and development among senior nursing students and to evaluate the effectiveness of the educational strategies towards growth and development monitoring	The students had inadequate knowledge regarding child growth and development before the educational intervention after which it improved. Also, it was found that these educational strategies were useful in improving knowledge, self-confidence to conduct a developmental assessment. It also was seen to improve the students' understanding of the parental role in developmental assessments.
Reichert et al.[23]	Prospective pre-post design	n=45 Nurses	Educational intervention regarding a workshop on developmental surveillance	To examine the nurses' knowledge and practice towards child developmental surveillance and to get feedback about nurses' attitude on screening practice from mothers of under two years old children	Post the workshop there was a substantial increase in the regularity of the nursing practice in assessing children's development, usage of tools to screen children for developmental delays. Nurses had also begun guiding mothers with respect to early interventions.
Esmail et al. [29]	Prospective pre-post design	n=20 Nurses	Educational intervention regarding, mental retardation and screening and identification of children with mental retardation.	To assess the nurses' knowledge and practice towards developmental disorder like intellectual disability	The educational intervention plan was effective in improving nurses' knowledge and skills in early detection and prevention of intellectual disability in children.
Roberts & Jones [30]	Prospective pre-post design	n=15 nurses	Training program towards newborn screening	To identify the nurses' knowledge level towards newborn hearing screening,	The researchers identified that the study participants had less knowledge about a newborn hearing screening during the baseline survey which improved after the training

Discussion

This integrative narrative review has overwhelmingly found lacunae evident in the nurses' knowledge which has therefore interfered with their ability to effectively screen children who might have had developmental delay. If one examines the curriculum in India, basic undergraduate training programs are similar throughout the country [31,32], where training is inadequate in the area of child development [33]. Post graduate training programmes differed across specialties as expected [12]. It may be important to set aside adequate time in the nursing undergraduate curriculum for child development as a subject; it also seems to be an important topic for ongoing training as well. Other ways to improve involvement among undergraduates in this important area was to utilize digital interactive sessions and videos [34]. Other engaging strategies such as clinical demonstrations may also help with their practice and study. Thus, a hybrid approach with a combination of theoretical learning along with practice and case discussions over their curriculum such that enough interest is generated in the subject for reflection and study which will then inform professional practice [34,35]. Apart from undergraduate training, training nurses who work with children and parents in any capacity need ongoing training. An interesting method to improve sustainability of training to practice maybe to consider some form of maternal/parental feedback [36].

Inadequate knowledge regarding child development alone is not the only barrier in screening children for developmental delays among nurses. In fact, there are other systemic barriers including role ambiguity, varied practice settings, large caseloads and lack of time to perform screening assessments [31]. Other issues such as a lack of awareness of referral pathways and early intervention services may also be considered barriers; knowledge regarding these services may prompt nurses to proactively ask for these concerns and refer, if required. These issues are as important and need to be addressed as much as the knowledge gaps and may be considered as "practice gaps". The above-mentioned barriers have to be studied in detail as they may be region and context specific and addressed specifically especially if one wants to truly improve developmental outcomes for children in the community.

There are a number of limitations to this review. Given that this study was not a systematic review, it is possible that studies or data may have been missed. We tried our best to include all the relevant studies but it cannot be ruled out completely. Having said that, there are very few studies on the topic and thus our results must be understood keeping the scarcity of information available in mind. No study assessed in this review was a randomized control trial and thus the efficacy of the interventions discussed must again be interpreted judiciously. There were a number of discrepancies in the knowledge and screening practice assessments done across the studies as no standard or uniform method was followed to assess for these outcomes. Undergraduate nursing curricula vary according to each country's or region's specific needs. Again, comparisons between studies was difficult given their varied study methodologies.

Conclusion

Based on this review, it is evident that there are lacunae in the area of child development for nurses-both with respect to knowledge and screening practice. Ways to incorporate child development into the present curricula including the pedagogical methods that will be used is a matter that will have to be given some thought by those involved in nursing education. It was seen that ongoing training programs have a beneficial impact. Most of the studies found that nurses would like to participate in additional and ongoing training in the area of child development making the demand for such a subject extraneous. It is

important that professionals who are policy makers with respect to nursing education take note of these findings.

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