Opinion of Doctors, Nurses and Key informants regarding Independent Nurse Midwifery Practitioner in Northern India: A Descriptive study

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Abstract:
Background: Despite improvement in coverage of institutional deliveries and skilled birth attendants, India has missed its Millennium Development Goal to reduce Maternal Mortality Rate. In order to increase access to primary care services and to lower the maternal mortality rate (MMR) and Infant Mortality rate (IMR) the Independent Nurse Practitioner (INP) is one of the best solutions.
Aim: to assess the opinion of doctors, nurses and key informants regarding Independent Nurse Midwifery Practitioner (INMP) and to determine the association of opinion score of doctors, nurses and key informants with their selected demographic variables.
Method: a total of 400 subjects (120 doctors, 120 nurses and 160 key informants) were selected using purposive sampling technique from selected hospitals and nursing colleges of Haryana. The tool used for the study consisted of structured performa regarding sample characteristics and likert scale. Reliability of likert scale was calculated by Cronbach's alpha (0.75). Descriptive and inferential statistics were used to analyze the data.
Results : doctors, nurses and key informants had moderately favorable opinion towards Independent Nurse Midwifery Practitioner and a significant difference (p= 0.001) between mean opinion score of doctors (81.49), nurses (92.80) and key informants (92.08) was obtained. A significant association was found in mean opinion score of doctors with their gender; nurses with their age, working experience and previous knowledge about INMP and among key informants with their educational and occupational status. Majority of doctors, nurses and key informants had high opinion about competency of nurses. More than half of doctors, nurses and key informants had agreement regarding medication capability of nurses. Interestingly, nurses had low opinion score than doctors and key informants regarding consumers' acceptance.
Conclusion: Nurses, Doctors and key informants had moderately favorable opinion about Independent Nurse Midwifery Practitioner.
Keywords: Opinion; Doctors; Nurses; Key informants; Independent Nurse Midwifery Practitioner.

I. Introduction

Nursing is a profession within health care sector aimed on providing best possible quality care to individual, family and community to restore health and prevent injury. Healthy women are the key to the health of any nation. Midwifery in India has climbed up the ladder of progression from before independence till the present day. Midwives "who are educated and regulated to international standards," according to the World Health Organization, can provide 87% of the essential care for women and newborns and many countries across the world are slowly understanding this, along with the realization that midwifery also helps bring down total healthcare cost.[1] There is growing evidence that trained midwives are as good as doctors in taking care of pregnant women and in overseeing uncomplicated births[2].

During the twentieth century, there was a tremendous change in the nursing profession. This evolution has brought an immense modification in the way how nurses are educated and clinically prepared. Due to rising health needs, independent nursing is in a great demand. In order to increase access to primary care services specially to large underserved population, the Independent Nurse Practitioner (INP) is one of the best solutions.

The INP's role was established in the mid-1960s as a solution to shortage of physicians. The first Nurse Practitioner (NP) Program was developed as a master's degree curriculum by Dr. Henry K. Silver, a pediatrician and Loretta C. Ford, a nursing faculty member at the University of Colorado's School of Nursing in 1965. The first program was in pediatrics and then soon spread to many other health care specialties.[3]

Midwifery practitioners are specialists in low-risk pregnancy, childbirth, and postpartum. They generally strive to help women to have a healthy pregnancy and natural birth experience. They are trained to recognize and deal with deviations from the normal.

Midwifery nurse practitioners are uniquely qualified to resolve unmet needs in primary health care by serving as an individual's point of first contact with the health care system. This contact provides a personalized, client-oriented, comprehensive continuum of care and integrates all other aspects of health care over a period of time. Their focus of care is on health surveillance (promotion and maintenance of wellness), but it also provides for management of complications in order to maintain continuity.

In order to provide better medical services in rural areas, Indian Nursing Council (INC) - the parent body of the nursing councils in the country - along with Trained Nurses Association of India (TNAI) introduced independent nurse practitioners programme on midwifery. Under this programme, trained nurses will take up on them normal deliveries in sub-centers and primary health care centers in the absence of doctors.

Various studies have proved that Independent Nurse Practitioners (INP) provide quality care equal to or even better than the physicians. Moreover, they can provide services in the areas where there is extreme shortage of doctors. In India, two health centers in Hyderabad, Healthy Mother and Fernandez Hospital, have proven that maternity centers with well-trained midwives can run efficiently and be accepted by the community[1]. In the United States, some studies have indicated that midwife-attended births have lower NICU admission rates, lower cesarean birth rates and greater patient satisfaction with care. Midwifery is increasingly perceived as an appropriate alternative to traditional obstetrical care. Consequently, the use and need for midwives continues to grow.[4]

There are many barriers to the development of Independent Nurse Practitioners, including challenging work environment, lack of support and understanding of Nurse Practitioners role, lack of trust on nursing capabilities, threats to General Practitioners status including job and financial security.[5]

Impending physician shortages in India will necessitate greater reliance on physician assistants and nurse practitioners, particularly in primary care. But, the main issue is that would it will be acceptable to physician and the stake holders and how willing are Indians to accept that change? This study will examine the opinion of Doctors, Physicians and consumers regarding Independent Nurse Midwife Practitioners.

II. Material And Methods
This descriptive study which took place in the selected hospitals of Ambala, Panchkula and Yamunanagar district of Haryana between August 2016 to June 2017. The ethical clearance was obtained from Institutional Ethical Committee (MMU/IEC/790). This was followed by obtaining formal approval from Medical Directors/ Civil Surgeons of selected hospitals. The consent from participants was obtained before data collection.

Study Design: Descriptive Survey Design

Study Location: Hospitals and colleges of Panchkula, Ambala and Yamunanagar   districts of Haryana

Study Duration: August 2016 to June 2017

Sample size: 400 subjects (120 doctors, 120 nurses and 160 key informants).

Subjects & selection method: A total of 400 subjects (120 doctors, 120 nurses and 160 key informants) were selected using purposive sampling technique from selected hospitals and nursing colleges of Haryana selected by convenience sampling.

Survey instrument
The tool used for the study consisted of structured performa regarding sample characteristics and likert scale to assess opinion regarding Independent Nurse Midwifery Practitioner. Five point Likert scale had 26 (13 positively framed, 13 negatively framed) statements regarding medication, education, role performance, diagnostic evaluation, consumers acceptance and competency of nurses. Content Validity of the tools was established by submitting it to eleven experts in relevant area. Reliability of likert scale was calculated by Cronbach's alpha (0.75).

Inclusion criteria:
Doctors, nurses and key informants who were
* available at the time of data collection in study setting.
* willing to participate in the study.

- able to read and write Hindi or English.

Exclusion criteria:
Key informants who were not having minimum qualification as graduation.

Procedure methodology :
Participants were asked whether they have heard about Independent Nurse Midwifery Practitioner or not, then information regarding this is provided to them in verbal as well as in written form along with the tool and debriefing about roles and responsibilities of Independent Nurse Midwifery Practitioner was done before providing the tool. Then finally, Opinion regarding Independent Nurse Midwifery Practitioner was assessed. The data collection was done with the paper - pencil technique. Data was collected from 7-8 participants in a day. The average time taken to collect data from one participant is about 12-15 minutes.Doctors (n= 120) and Nurses (n = 120) from selected hospital were approached in both morning and evening shift. Key informants (n= 160) were the patients who were attending O.P.D and admitted in different wards and their relatives with minimum qualification as graduation were approached.

Statistical analysis:
Statistical analysis of collected data was performed using the statistical package for social sciences (SPSS, version 16). Descriptive statistics were expressed in terms of frequency, percentage, mean and median. Inferential statistics involved One way ANOVA , post hoc and independent t – test.

III. Result
Frequency and percentage distribution of demographic variables of doctors, nurses and key informants are illustrated in Table 1. One third of the doctors (30%) were in age group of 31-40 years whereas majority of nurses (76.60%) and nearly half of key informants (51.90%) were in age group of 20-30 years. Most of the doctors (71.70%) were male whereas majority of nurses (94.20%) and nearly half of key informants (55%) were female. Majority of doctors (64.20%) and nearly half of key informants (58.20%) were having educational level of graduation whereas majority of nurses (61.70) were having educational level of diploma. Nearly half of the doctors (52.50%) were in government job whereas most of nurses (61.70%) were in private job and nearly half of key informants (48.10%) were in private job . In working experience nearly half of doctors (45%) and majority of nurses (87.50%) were having working experience in between 1-10 years. Nearly half of the doctors (47.50) were from medicine department and nearly one third of nurses (34.20) were from Obstetrics and gynaecology department. Nearly one third of doctors (35%) , nearly half of nurses (41.70%) and less than one tenth of key informants(03.80%) were having information about Independent Nurse Midwifery Practitioner.

Table 1: Analysis of Variance (ANOVA) for Comparison of Opinion Score
One- way ANOVA revealed a significant difference in mean opinion score (F= 108.3, p$\leq$ 0.05) of doctors, nurses and key informants regarding Independent Nurse Midwifery Practitioner.

N =400

Group	Mean ± SD	F test	d.f	p value
Doctors (n=120)	81.49 ± 6.90			
Nurses (n=120)	92.80 ±5.87	108.3	2/397	0.001[*]
Key informants (n=160)	92.08 ±7.34			

*significant (p$\leq$0.05)
[NS] Not Significant (p>0.05)

Table 2: Post Hoc showing Difference between Mean Opinion Score of Doctors, Nurses and Key Informants Regarding Independent Nurse Midwifery Practitioner.
There was a significant difference (p= 0.001) between the mean opinion score of doctors (81.49) with both nurses (92.80) and key informants (92.08) at 0.05 level of significance whereas, there was no significant difference (p= 0.64) between the mean opinion score of nurses (92.80) and key informants(92.80) at 0.05 level

of significance. It means nurses and key informants have almost similar opinion towards Independent Nurse Midwifery Practitioner.

N = 400

Groups		Mean Difference	Standard Error	p value
Nurses	Doctors	11.31	0.83	0.001[*]
	Key informant	00.71	0.79	0.64 [NS]
Key informant	Doctor	10.59	0.85	0.001[*]

*Significant (p≤0.05)
[NS] Not Significant (p>0.05)

Table 3: Area Wise Mean, Standard Deviation, Mean Percentage of Opinion Score
Area wise distribution of mean percentage of opinion score of doctors, nurses and key informants are illustrated in Table 3. Maximum participants had high opinion about competency of nurses. More than half i.e. 50.15% of doctors, 61.80% of nurses and 65.90 % key informants had agreement regarding medication competency of nurses. Interestingly, nurses had low opinion score (54.40%) than doctors (62.20%) and key informants (64.80%) regarding consumers acceptance.

N= 400

Areas	Doctors Mean%	Rank	Nurses Mean%	Rank	Key informants Mean % Rank	
Medication	50.15%	IV	61.80%	III	65.90%	II
Education	46.20%	VI	57.00%	IV	56.70%	V
Role performance	58.30%	III	69.05%	II	64.55%	IV
Diagnostic Evaluation	46.40%	V	52.60%	VI	56.25%	VI
Consumers Acceptance	62.20%	II	54.40%	V	64.80%	III
Competency	71.30%	I	79.50%	I	76.80%	I

Table 4: ANOVA & t value showing association of Opinion Score of Doctors, Nurses and Key informants with selected demographic variables
One -way ANOVA and t value depicted the association of opinion scores of doctors, nurses and key informants with selected demographic variables. Mean opinion score of doctors was dependent on gender; Mean Opinion score of nurses was dependent on their age, working experience and previous knowledge about INMP and mean opinion score of key informants was dependent on their educational and occupational status .

N = 400

S. No.	Sample Characteristics	Doctors Mean	F/t test	df	p value	Nurses Mean	F/t test	df	p value	Key informants Mean	F/t test	df	p value
1.	**Age (in years)**												
1.1	20 – 30	82.00	0.56	3/116	0.643[NS]	93.67	6.44	3/116	0.001[*]	92.57	0.92	3/156	0.432 [NS]
1.2	31 – 40	81.55				91.94				91.72			
1.3	41- 50	79.91				84.87				92.30			
1.4	> 50	82.16				92.00				89.00			

No.	Category	Mean	Stat	df	p	Mean	Stat	df	p	Mean	Stat	df	p
2.	**Gender**												
2.1	Male	82.38	2.28	118	0.024 *	92.00	0.37	118	0.712 NS	91.13	1.50	158	0.134 NS
2.2	Female	79.23				92.84				92.86			
3.	**Educational level**												
3.1	Diploma	____								____			
3.2	Graduation	81.57	0.07	2/117	0.930 NS	92.68	0.05	2/117	0.940 NS	91.34	6.18	2/157	0.003 *
3.3	Post Graduation	81.26				93.02				93.60			
3.4	Others	83.00				92.33				77.50			
4.	**Occupational Status**												
4.1	Private	81.00	1.78	2/117	0.173 NS	93.58	3.48	1/118	0.065 NS	90.79	4.30	3/156	0.006 *
4.2	Government	81.57				92.80				94.00			
4.3	Self employed	88.66				____				89.57			
4.4	Unemployed	____				____				95.06			
5	**Working experience (in years)**												
5.1	1 – 10	81.31	0.84	3/116	0.470 NS	93.38	3.23	3/116	0.025 *	N.A			
5.2	11 – 20	81.12				87.66							
5.3	21 – 30	83.47				89.50							
5.4	> 30	79.83				92.00							
6.	**Area of work experience**												
6.1	Medicine	81.98	0.88	8/111	0.534 NS	93.52	1.61	8/111	0.129 NS	N.A			
6.2	Surgery	80.36				93.58							
6.3	Obs&Gynae	82.57				93.73							
6.4	Pediatrics	77.20				93.33							
6.5	Ortho	84.60				93.33							
6.6	I.C.U	82.16				92.40							
6.7	Emergency	85.00				88.83							
6.8	O.P.D	77.50				89.26							
6.9	Eye & E.N.T	82.00				90.00							
7.	**Any information about INMP**												
7.1	Yes	81.28	0.23	118	0.81 NS	94.84	3.34	118	0.001 *	89.50	0.88	158	0.380 NS
7.2	No	81.60				91.34				92.18			

IV. Discussion

The present study aimed to assess the opinion of doctors, nurses and key informants regarding Independent Nurse Midwifery Practitioners at selected hospitals and colleges of nursing in Haryana.

The findings of the present study showed that majority of nurses i.e. 95% followed by 90.62% of key informants and 75.83% of doctors had favourable opinion towards Independent Nurse Midwifery Practitioner which is similar to study findings conducted by Deltimol Mathew and Harindar Jeet Goyal[6] that showed among general population and health care professionals (including general public = 50, Nurses = 30, doctors = 20.) 80% public, 100% nurses and 50% doctors had opinion that it is possible to have NPs in India whereas 35% of doctors felt that it was not possible.

In current study most of nurses (80.00%) believed that Independent Nurse Midwife Practitioners (INMPs) will be able to prescribe labour medications efficiently and there will be better communication between clients and INMPs to discuss many concerned areas. About 80.80% believed that INMPs will be able to use advanced health assessment skills properly to differentiate between normal and abnormal findings. Nearly 79.20 % agreed that INMPs will help in decreasing Maternal Mortality Rate (MMR), Infant Mortality Rate (IMR) and will be able to perform clinical and administrative roles effectively. Similarly , in another study out of a total of 363 samples 50- 70% felt that the nurse midwife can perform the various aspects of maternity care independently namely antenatal checkup, recognizing high risk pregnancies, conducting normal deliveries ,managing complications related to mother and baby during delivery.[7]

Findings of the present study showed that majority of key informants (72.50%) agreed that mother's satisfaction will be higher with INMP's care. These findings were similar with the findings of study which showed women appreciated the midwife led service which provides an environment where they are more likely to aim to give birth without intervention.[8]

V. Conclusion

Nurses, Doctors and key informants, all had moderately favorable opinion towards Independent Nurse Midwifery Practitioner . Nurses had more favorable mean opinion score followed by key informants and doctors towards Independent Nurse Midwifery Practitioner.

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