

## SHORT ARTICLE

# Time trends in the thesis work by post-graduate students of Community Medicine: A record based descriptive study of 40 years

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## Abstract

**Background:** Thesis work conducted by post-graduate students of Community Medicine is critically appraised by not only their examiners but also by many other public health experts and researchers. Issues related to the repetition of work and quality of thesis work is raised by various authors. **Objective:** To assess the time trend in the thesis work done by post-graduate students of Community Medicine. **Material and methods:** This is a record based descriptive observational study conducted in the department of Community Medicine of S. N. Medical College, Agra (Uttar Pradesh). Data from all the 66 theses which were submitted by the Post Graduate students of our department till date was collected and assessed systematically. **Result:** Most preferred areas of research were MCH/Family Planning (28.79%) and Programme/Service evaluation (22.73%). 77.27% of theses were community based, 36.37% were done exclusively in a rural area, 24.24% of theses had children/adolescent as their study subjects and 28.79% were conducted exclusively among females. A knowledge, attitude and practice (KAP) or Knowledge, attitude, behavior and practice (KABP) study was part of many theses but exclusive KAP/KABP study was done only in 12.12% of theses. A purposive or convenience sampling was done in only 18.33% of theses, 86.67% were cross-sectional in design and median sample size was 450 participants per thesis. In comparison to the theses done upto the year 2000, theses thereafter were more often based in an urban area and less often done in an exclusive rural area ( $p=0.0003$ ) and all KAP/KABP studies were done after the year 2000 ( $p=0.004$ ). **Conclusion:** There is no repetition or excessive use of KAP/KABP studies in the theses done by post-graduate students of the department of Community Medicine, S. N. Medical College, Agra

## Key Words

Thesis; Research; Post-graduate students; Community Medicine; KAP/KABP studies etc.

## Introduction

The apex regulatory body of medical education in India i.e. "Medical Council of India" (MCI) clearly mentions that post-graduate examination, in any subject shall consist of Thesis, Theory Papers and Clinical/Practical and Oral examinations (1). It also says that work for writing the thesis is aimed at contributing to the development of a spirit of enquiry, besides exposing the candidate to the techniques of research, critical analysis,

acquaintance with the latest advances in medical science and the manner of identifying and consulting available literature (1). For Community Medicine, essential competencies to be acquired at the end of postgraduate (PG) education also include managerial and epidemiological skills in health care delivery system and national health programmes, skills to identify community health needs, research methodology and abilities of training of medical and paramedicals personnels (2). Therefore thesis work conducted by post-graduate students of Community

Medicine has always been a matter of debate for obvious reasons. Their work is continuously scrutinized and critically appraised by many examiners, researchers and public health experts for different reasons. Examiners, on the one hand, want to assess the proper and scientific use of research methodology in a thesis; while on the other hand, a researcher looks for the newness of idea in it and public health experts are more often interested in the applicability of its result in the field of public health. It is therefore very imperative to keep a balance between all these aspects while conducting a thesis.

According to Dhawal DS et al (2013) in the past as well as in the current scenario, M.D. thesis is generally seen as an obligation or just a stipulated work necessary to pass the examination by the post-graduate students, so there is hardly any serious effort to take up a difficult or newer research topic and there is a general tendency to repeat similar work carried out in the past with minor modifications (3). Most of the M.D. thesis/research carried out by the post-graduate students is in form of KAP studies, most of them on already exhaustively studied topics, resulting in scientific research that overlaps substantially with ones already published (3). But there is hardly any data to prove or disprove the said trend in thesis work or to see if there is any change in the pattern over the period of time.

### Aim & Objective

So the present study was conducted with an objective of finding the time trend in the thesis work done by post-graduate students of Community Medicine.

### Material and Methods

This record based descriptive observational study was conducted in the department of Community Medicine, S. N. Medical College, Agra (Uttar Pradesh). S.N. Medical College is amongst the oldest and most reputed medical colleges of India and was established in the year 1854. The department of Community Medicine (formerly the department of Social and Preventive Medicine) was established in the year 1962 and the M.D. course was started in the year 1975. First post-graduate M.D. student submitted his thesis in the year 1978 to the Dr. B. R. Ambedkar University (formerly Agra University, Agra) which affiliates all the courses run by S. N. Medical College, Agra. Till date, a total of 66 theses have been accepted by the university; a compulsory

step before awarding M.D. degree in any discipline. One copy of all the theses is kept in the departmental and college library for future reference and guidance. All these theses were collected and information gathered from them was analyzed in a systematic manner. Relevant statistical tests were used for analysis of data.

### Results

A total of 66 theses which were submitted by the post-graduate students of Community Medicine department of S. N. Medical College Agra were assessed and analyzed. Out of these 66 post-graduates students, 43 (65.15%) were male candidates while 23 (34.8%) were female candidates. When we analyzed the topic of thesis work done by our post-graduate students ([Table 1](#)) we found that most preferred area of research was Maternal and Child Health (MCH) and Family Planning (FP) with 28.79% of theses. 77.27% of theses were community based, 40.91% of theses were done exclusively in an urban area and 59.09% of theses involved only adults while 24.24% of theses had children/adolescent as their study subjects and 6% of research was done on older population. Respondents were both male and female in 63.63% of theses. A knowledge, attitude and practice (KAP) or Knowledge, attitude, behavior and practice (KABP) study was part of many theses but exclusive KAP/KABP study was done only in 12.12% of theses. A purposive or convenience sampling was done in 18.33% of theses while rest of 81.67% of theses used a more scientific non-purposive or non-convenience sampling technique. A total of more than 1.80 lakhs people had participated in all theses but the median sample size was 450 participants per thesis.

Sub-topics in MCH/FP research varied from Socio-economic factors for birth weight, Laparoscopic sterilization acceptors, ANC INC and PNC services, IUCD acceptors, Newborn care-PLA, Women and child mortality-PLA, Breast feeding, safe motherhood, unmet need, contraceptive use etc. Likewise in the field of programme/service evaluation, subtopics were diversified from Mid-decade goals, functioning of subcenters, CSSM, RCH-quality, Health goal for children, Safe motherhood to evaluation of Janani Suraksha Yojana and Suraksha clinic including others.

**Changing pattern of thesis work over time:** During the analysis, year 2000 was taken as an arbitrary cutoff to make two groups for assessing the time

trend as the said year divides all the students into almost equal two halves. 31 (47%) theses were submitted up to the year 2000 and 35 (53%) were submitted after that year. Proportion of girls in M.D. Community Medicine has significantly risen from 16.13% to 51.43% in the said period ( $p=0.002$ ).

Up to the year 2000; most of the theses were done in the field of Communicable diseases (25.81%) followed by Programme/Service evaluation and MCH/Family Planning (22.58% each). In that era, almost 77.42% of theses were community based, 61.29% were done exclusively in a rural area, 19.35% had children/adolescent as their study subjects and 19.35% were conducted exclusively among females. Exclusive KAP/KABP study was done in none of the theses. Purposive sampling was done in 16.13% of theses, 83.87% were cross-sectional in design and median sample size per thesis was 613.

But after the year 2000 most of parameters got changed. MCH and family planning now became most favoured topic of research with more than one third (34.29%) of thesis work in this particular field. Programme/Service evaluation (22.86%) and Non-communicable disease (20%) further displaced Communicable diseases (14.29%) to fourth spot in this list. So when we compare the thesis work of up to the year 2000 group in comparison to after the year 2000 group we found that numbers of thesis in the field of MCH/FP and NCD have almost doubled in this period while number of theses in Communicable diseases and overall health status have reduced to half. Proportion of theses in Programme/Service evaluation remained unchanged during the period and it remained as the second most favourite topic of thesis work in both the era. Proportion of institutional studies in comparison to community based studies remained unchanged over the period but exclusive urban studies significantly increased from 25.81% to 54.29% while exclusive rural studies reduced from 61.29% to 14.29% over the same period ( $p=0.0003$ ). Proportion of theses with children/adolescents as study subjects increased from 19.35% to 28.57% and exclusive thesis work on female population has almost doubled from 19.35% to 37.14% in the said period. Exclusive KAP/KABP study was done in 8 of the 35 theses (22.86%) after the year 2000 in comparison to none of the 31 theses in previous years and this difference is statistically significant ( $p=0.004$ ). 7 out of these 8 theses with an exclusive KAP/KABP study were done in the period of 2002-06. Proportion of convenience sampling

increased from 16.13% to 22.86% and longitudinal or follow up studies were reduced from 16.13% to 5.71% in the said period. The median sample size dropped more than 40% in the above mentioned period and it came down to 360 per thesis in the later half from its original 613 per thesis.

#### **Possible reasons for this time trend:**

##### **a. Thesis work as conducted by male and female post-graduate students of Community Medicine:**

When the comparisons were made between the thesis work by male and female post-graduate students of Community Medicine ([Table 2](#)) it was observed that the female PG students were more often involved in thesis work in the field of Family Planning/Maternal and Child Health while male PG students dominated all other fields of research ( $p=0.0009$ ). Female PG students also had higher chances of an exclusive urban settings of study ( $p=0.031$ ), had more often conducted a thesis in female only population ( $p=0.000$ ) and had done an exclusive KAP/KABP study as part of their thesis ( $p=0.011$ ). On the other hand male PGs were more significantly involved in exclusive rural work and had higher chances of having males or mixed population as their study participant.

**b. Other possible reasons for this time trend:** So according to the time trends, there is a significant increase in number of theses based in an urban area but there is also a significant reduction in the number of theses in a rural setting. Shifting of focus of public health from communicable to non-communicable and from vague topic like overall health to more specific topic of maternal and child health and family planning has also evident from the thesis/research done by post-graduate students of Community Medicine. Apart from a significant increase in the number of girls in M.D. Community Medicine, other possible reasons for this changing pattern of thesis work could be the perceived usefulness of thesis and inclination & attitude of a P.G. student, experience and pre-occupation of guide and co-guide in the selection and other aspects of research methodology, working environment and ongoing research projects in the department, financial and administrative support from the institution and N.G.O.s, health need and desire of population of that particular region, shifting of focus of public health experts and government over the period of time etc

#### **Discussion**

We, on the basis of results of our study, refute two point which have been raised previously by some authors: firstly, most of the M.D. thesis/research carried out by the post-graduate students is in form of KAP studies and secondly, there is hardly any serious effort to take up a difficult or newer research topic and there is a general tendency to repeat similar work carried out in the past with minor modifications (3).

A lot of KAP or KABP studies have been done as a part of thesis work by post-graduate students of Community Medicine but in more than 90% of cases it was not exclusive but a component of broader and detailed thesis work. Exclusive KAP or KABP studies are fewer and that too are clustered in a particular time zone i.e. from 2002 to 2006. Reason may be the fact that it was a newcomer and charmer at that time and so a lot of theses were based on a Knowledge, Attitude, Behaviour and Practice type of studies. But after the year 2006, there is only one thesis which is solely based on a KAP/KABP type of study.

There is apparently no repetition of thesis work at S. N. Medical College, Agra. Topics of research were different and keep on changing with the time in line of the need and necessity of that period. In the common topics like MCH and family planning; research was done on various subtopics like Socio-economic factors for birth weight, Laparoscopic sterilization acceptors, ANC INC and PNC services, IUCD acceptors, Newborn care-PLA, Women and child mortality-PLA, Breast feeding, safe motherhood, unmet need, contraceptive use etc. Likewise in the field of programme/service evaluation; subtopics were very much diversified. According to Sunder Lal et al (2011) the teachers/faculty/guides should be well versed and have sufficient experience on the chosen subject of students thesis in order to provide effective guidance to the students (3). The faculty of the department should select relevant research topics well in advance, in the area of health system research covering national health programmes, health care delivery system, health management and local health problem as identified by the district or state (3). Luckily, the department of Community Medicine of S. N. Medical College has been blessed by the presence of eminent teachers and public health experts like Late Dr. (Prof.) Deoki Nandan Sharma, Dr. B. C. Shrivastava and Dr. S. C. Banerjee including others and so the results shown by this study may

not reflect the quality of thesis work done by post-graduate students of Community Medicine in general.

## Conclusion

This study proves that very few M.D. thesis/research conducted by post graduate students of community medicine, S. N. Medical College Agra were exclusive KAP/KABP type of study and secondly, there is no repetition of topics and most of the topics were newer and relevant to that period of time.

## Recommendation

Theses done by post graduate students of community medicine should be relevant and diversified and must be in the line of public health need of that period.

## Limitation of the study

This study carries all the limitations of a record based study.

## Authors Contribution

MMN: Concept design, data collection, data compilation, manuscript writing, manuscript editing, SSC: Overall research study and manuscript writing, SKM: Intellectual inputs, manuscript editing, Critical appraisal

## Acknowledgement

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## Tables

**TABLE 1 DISTRIBUTION OF SUBJECTS ACCORDING TO VARIOUS ASPECTS OF THESIS WORK OVER THE PERIOD OF TIME**

Various aspects of thesis work		All time (n=66)	Upto the year 2000 (n=31)	After the year 2000 (n=35)	Chi-square value (degree of freedom; p value)
<b>Sex of PG student</b>	Male	43 (65.15%)	26 (83.87%)	17 (48.57%)	9.02 (d.f.=1; p=0.002)
	Female	23 (34.85%)	5 (16.13%)	18 (51.43%)	
<b>Field of research</b>	MCH/FP	19 (28.79%)	7 (22.58%)	12 (34.29%)	4.95 (d.f.=5; p=0.42)
	CD	13 (19.70%)	8 (25.81%)	5 (14.29%)	
	NCD	11 (16.67%)	4 (12.90%)	7 (20.00%)	
	Health profile	7 (10.61%)	5 (16.13%)	2 (5.71%)	
	Programme/Service evaluation	15 (22.73%)	7 (22.58%)	8 (22.86%)	
	Other	1 (1.52%)	0 (0.00%)	1 (2.85%)	
<b>Site of study</b>	Community based	51 (77.27%)	24 (77.42%)	27 (77.14%)	0.00 (d.f.=1; p=0.97)
	Institutional	15 (22.73%)	7 (22.58%)	8 (22.86%)	
<b>Area of study</b>	Urban	27 (40.91%)	8 (25.81%)	19 (54.29%)	22.70 (d.f.=2; p=0.0003)
	Rural	24 (36.37%)	19 (61.29%)	5 (14.29%)	
	Both	15 (22.72%)	4 (12.90%)	11 (31.42%)	
<b>Age-group of participants</b>	Children / Adolescents	16 (24.24%)	6 (19.35%)	10 (28.57%)	3.74 (d.f.=3; p=0.58)
	Adult	39 (59.09%)	20 (64.52%)	19 (54.29%)	
	Older	4 (6.06%)	1 (3.23%)	3 (8.57%)	
	Unspecified	7 (10.61%)	4 (12.90%)	3 (8.57%)	
<b>Sex of participants</b>	Male only	5 (7.57%)	2 (6.45%)	3 (8.57%)	6.85 (d.f.=2; p=0.23)
	Female only	19 (28.79%)	6 (19.35%)	13 (37.14%)	
	Unspecified	42 (63.64%)	23 (74.20%)	19 (54.29%)	
<b>KAP alone</b>	Yes	8 (12.12%)	0 (0.00%)	8 (22.86%)	8.06 (d.f.=1; p=0.004)
	No	58 (87.88%)	31 (100%)	27 (77.14%)	
<b>Sampling technique</b>	Convenience/purposive	13 (19.70%)	5 (16.13%)	8 (22.86%)	0.47 (d.f.=1; p=0.49)
	Non-purposive	53 (81.30%)	26 (83.87%)	27 (77.14%)	
<b>Research design</b>	Cross-sectional	58 (87.88%)	26 (83.87%)	32 (91.43%)	6.47 (d.f.=2; p=0.26)
	Longitudinal	7 (10.61%)	5 (16.13%)	2 (5.71%)	
	Interventional	1 (1.51%)	0	1 (2.86%)	

**TABLE 2 DISTRIBUTION OF SUBJECTS ACCORDING TO VARIOUS ASPECTS OF THESIS WORK BY MALE AND FEMALE POST-GRADUATE STUDENTS OF COMMUNITY MEDICINE**

Various aspect of thesis work		Overall (n=66)	Male (n=43)	Female (n=23)	Chi-square value
<b>Period of thesis work</b>	Upto the year 2000	31 (46.97%)	26 (60.47%)	5 (21.74%)	9.02 (d.f.=1; p=0.002)
	After the year 2000	35 (53.03%)	17 (39.53%)	18 (78.26%)	
<b>Field of research</b>	MCH/FP	19 (28.79%)	5 (11.63%)	14 (60.87%)	20.76 (d.f.=5; p=0.0009)
	CD	13 (19.70%)	11 (25.58%)	2 (8.70%)	
	NCD	11 (16.67%)	9 (20.93%)	2 (8.70%)	
	Health profile	7 (10.61%)	6 (13.95%)	1 (4.35%)	
	Programme/Service evaluation	15 (22.73%)	12 (27.91%)	3 (13.04%)	
	Other	1 (1.52%)	0 (0.00%)	1 (4.35%)	
<b>Site of study</b>	Community based	51 (77.27%)	34 (79.07%)	17 (73.91%)	0.22 (d.f.=1; p=0.63)
	Institutional	15 (22.73%)	9 (20.93%)	6 (26.09%)	
<b>Area of study</b>	Urban	27 (40.91%)	13 (30.23%)	14 (60.87%)	12.29 (d.f.=2; p=0.031)
	Rural	24 (36.37%)	20 (46.51%)	4 (17.39%)	
	Both	15 (22.72%)	10 (23.26%)	5 (21.74%)	



<b>Age-group of participants</b>	Children	16 (24.24%)	11 (25.58%)	5 (21.74%)	3.87 (d.f.=3; p=0.56)
	Adult	39 (59.09%)	24 (55.81%)	15 (65.22%)	
	Older	4 (6.06%)	2 (4.65%)	2 (8.70%)	
	Unspecified	7 (10.61%)	6 (13.95%)	1 (4.35%)	
<b>Sex of participants</b>	Male only	5 (7.57%)	5 (11.63%)	0 (0.00%)	31.45 (d.f.=2; p=0.000007)
	Female only	19 (28.79%)	4 (9.30%)	15 (65.22%)	
	Unspecified	42 (63.64%)	34 (79.07%)	8 (34.78%)	
<b>KAP alone</b>	Yes	8 (12.12%)	2 (4.65%)	6 (26.09%)	6.46 (d.f.=1; p=0.011)
	No	58 (87.88%)	41 (95.35%)	17 (73.91%)	
<b>Sampling technique</b>	Convenience/purposive	13 (19.70%)	7 (16.28%)	6 (26.09%)	0.91 (d.f.=1; p=0.33)
	Non-purposive	53 (81.30%)	36 (83.72%)	17 (73.91%)	
<b>Research design</b>	Cross-sectional	58 (87.88%)	37 (86.05%)	21 (91.30%)	7.29 (d.f.=2; p=0.19)
	Longitudinal	7 (10.61%)	6 (13.95%)	1 (4.35%)	
	Interventional	1 (1.51%)	0 (0.00%)	1 (4.35%)	

## Figures

**FIGURE 1 FIELD OF RESEARCH IN THESIS WORK BY POST-GRADUATE STUDENTS OF COMMUNITY MEDICINE - ALL TIME DATA (N=66)**

