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Kannan, Srinivasan and Sarma, P.Sankara

Achutha Menon Centre for Health Science Studies

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## STUDY ON WORKLOAD OF PUBLIC HEALTH NURSES AND OTHER WOMEN HEALTH WORKERS IN INDIA<sup>1</sup>

Srinivasan Kannan<sup>1</sup> and P.Sankara Sarma

Achutha Menon Centre for Health Science Studies

Sree Chitra Tirunal Institute for Medical Sciences and Technology

Trivandrum 695011, India

<sup>1</sup>For correspondence Email: [kannansrini@ymail.com](mailto:kannansrini@ymail.com)

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**Introduction.** The study gathered information on work load among women public health workers and factors associated with this in Thiruvananthapuram, Alappuzha, Ernakulam, Malappuram and Wayanad districts of Kerala. An increasing number of nurses were reported to have occupational hazards and are suffering from back injuries due to lifting and moving patients. A study in Australia found work and age related factors increase difficulties that lead to perceived workload (Fragar and Depczynski 2011). Philibin et.al. study in Ireland on public health nurses' role in changing society emphasized the need for defining and redesigning their role for better community service.

**Methodology:** Primary data collection was done from 1238 respondents that included, Junior Public Health Nurses, Junior Health Inspector, Staff nurses, Lady Health Inspectors and Lady Health Supervisors. In addition, time and work study in selected work places and Qualitative enquiries also been done.

**Findings:** The prevalence of three components of workload namely role overload, role stagnation and self role distance were 75.26% (95% CI: 72.78, 77.59), 55.62% (95% CI: 52.84, 58.37) and 12.04% (95% CI: 10.34, 13.97) respectively. The role stagnation decreases with age ( $p=0.004$ ). The Role overload is higher among women and the role stagnation and self role distance are higher among men. Workload is higher to those who disagree that their training helped in upgrading skills and knowledge. **Conclusion:** Workload of public health nurses is related to their salary, additional duties such as managing funds, attending meetings, maintaining records and so on. They affect their assigned routine health delivery activities.

### Introduction

Health sector employs large number of women. Public health nurses in general are burdened with different work. In addition to routine activities like immunization, family planning, and other services, they are also expected to do report writing, attend meetings and so on. Further, they are also engaged in different national programs. Factors such as transfers, postings, poor working conditions and so on adds to their work load. The present study is an attempt to study these problems among the nurses of India in the state of Kerala.

The extent of services delivered by the female health workers in public health sector, their work allocation and work load handled by them is a considerable area of research in public health. But the vast area of literature in the area of nursing focuses either on the official duties or the practices of the nurses at

hospitals. Ngin (1994) discusses the process and context in which nursing documents are created and how they are actually used in delivering care. In the study on record keeping practices of nurses in hospitals the author noted that staff nurses are both care givers and authors of documents in medical records. One of the earlier studies (Wade, et al 1963) shows the ways in which public health nurses promote mental health. It noted that the large numbers of persons needing costly care for mental illness indicate that public health nursing should be utilized more effectively in the community mental health program. Wilson-Barnett (1986) gives an account of the ethical dilemmas related to nursing profession. A study on public health nursing professional in India conducted by the Academy of Nursing Studies, Hyderabad (2005) gives a situational analysis of the nursing manpower situation in India by compiling data from six districts including Assam, Bihar, Gujarat, Tamilnadu, Uttaranchal, and West Bengal. Persons like Sharma et al (2010) and Conrad et al (1985) also gives an account of the job satisfaction of the nurses and their official role and duties. Likewise, the occupational hazards of the nurses also become a topic of interest. An increasing number of nurses are suffering back injuries on the job from lifting and moving patients and heavy equipment (Helmlinger 1997). Fragar and Depczynski study on challenges at work for older nurses who were 50 and above in Australia. The study found work and age related factors increase difficulties lead to perceived workload(Fragar and Depczynski 2011). O'Donnell et.al study in UK on practice nurses' workload and its impact on isolation found nurses working alone are in a team of two more likely to feel isolated compared to 3 or more.( O'Donnell et.al 2010). Montour et.al study on challenging nature of nursing workforce in rural and small community hospitals in Canada found the nurses feel the new generation nurses different values and goals, structural changes in rural health system, routine scheduling issues among nurses due to rise in vacant positions and other technology related problems. (Montour A.et.al 2009).

Gum study in Australia on nursing students preparedness in rural practice found, majority of them prepared with regard to their attitudes for future practice and overall practice. (Gum 2007). Golubic et.al study on work related stress among nurses in University hospital in Croatia found, financial issues, educational level and age were identified as important occupational stressors. (Golubic et.al 2009). Nabirye et.al study on occupational stress among hospital nurses in Uganda found differences in occupational stress, job satisfaction and job performance between public and private hospitals.

Philibin et.al. study in Ireland on public health nurses' role in changing society emphasized the need for defining and redesigning their role for better community service. (Philibin et.al. 2010). Hegny et.al. 2004 study on workforce issues in Queensland found, the workload was heavy, skills and experiences are rewarded poorly, high work stress, poor morale. Findings were consistent with the earlier study conducted in 2001. (Hegny et.al. 2006). Begat et. al. study among the clinical nurses in Norway found, ethical conflicts creates job related stress and anxiety among nurses. Supervision has a positive effect on nurses. (Begat et.al 2005). Feng et.al study on low back pain among

the female nurses in Taiwan found, manual transfer of patients, perceived physical exertion, and psychological demands, were associated with low back pain.( Feng et.al. 2007).

### **Objective**

Present study is an attempt to explore the workload of public health nurses and other women health workers in Kerala. It also aims to gather information on level of work load among the public health workers and factors associated with them in five districts of Kerala.

### **Methodology**

This is a cross sectional study. Primary data was collected from public health nurses including staff nurses from Community Health Centres. The respondents of the study are Junior Public Health Nurses (JPHN), Junior Health Inspector (JHI), Staff nurses, Lady Health Inspectors (LHI) and Lady Health Supervisors (LHS) in five districts of Kerala.

### **Sampling**

Samples were drawn from the following five study districts of Kerala, Thiruvananthapuram, Alappuzha, Ernakulam, Malappuam and Wayanad. First a list of health centers in each of the five districts was collected from Directorate of Health Services (DHS), Government of Kerala. Then, an expert who is familiar with the district was consulted while selecting the Community Health Centres (CHCs) to be included in data collection. The inclusion criteria for the CHCs were based on the representation of all types of landscape in each district. As the study is relating to the workload, keeping the difficulties in delivering the services, different geographical locations of each district was included.

### **Table 1 here**

From the selected CHCs, the CHC, Primary Health Centre(PHC), and Sub-centre(SC) were identified for data collection. The list based on the selected health centres were shared with the data collection agencies for collecting data from the centres. Table 1. Shows the CHCs, PHCs and SCs under each of the district(refer Table 1). The investigators collected data from the different respondent categories viz. JPHNs, JHIs, Staff Nurses, LHIs and LHSs from the listed centres. They were also informed about the number of each of the respondent category before starting the fieldwork.

### **Table 2 Here**

Currently there are 10,203 public health nurses and other health workers work in Kerala. For the sample selection about 10% of the above mentioned i.e. about 1000, was included in the study. For sample selection first we randomly selected two to three blocks from a district and included the selected category of health workers from all the health institutions (Taluk Hospitals(TH), PHCs, CHCs and SCs) within the blocks. The selection of blocks varied as per the requirement of the intended respondents. We collected the data from the consented health workers. The number of respondents from each of the five districts who were included for the study is given in Table 2. In total 1238 respondents participated in the study.

### **Data collection**

Data was collected by the qualified field investigators who have experience in similar studies. Data was collected at the workplace of the health workers using a self administered questionnaire. The questionnaire comprises of four sections. They are, (a) Information and consent form, (b) General information, (c) Personal profile, (d) Duties and responsibilities related to Profession, (e) Perceptions, aspirations and ambitions related to work and career, (f) Role Overload, Distance and Stagnation (RODS) scale. All the sections excepting the RODS scale were developed by the investigators. RODS scale is, the RODS scale which was developed by Pareek and Purohit(2010). RODS is used to measure the 3 role stresses; role overload, self-role distance and role stagnation. The scale has 30 items; 10 for each of the 3 role stresses. **Reliability:** Cronbach Alpha for a group of 25 health administrators was reported to be 0.77.

For the field investigators and supervisors we organized one day training programme in each of the study district with the support of the data collection agency engaged for this purpose.

Confidentiality and anonymity was maintained throughout the study. There was an informed consent process followed while administering the questionnaire. The questionnaire was in simple Malayalam language and was easily understood by the respondents. The contact details of the principal investigators were mentioned in the instrument. The respondents were free to participate. All eligible men and women health workers (JPHN, JHI, staff nurse, LHI and LHS) who are working permanently in the selected health centers were included in the study. The study took 20 months from July 2010.

### **Workload**

The workload in the present study comprises of three elements. 1. Role overload, 2. Role distance, and 3. Role stagnation. As referred earlier for the purpose of measuring the workload RODS scale was administered among different categories of public health nurses. Following tables show the prevalence of three aspects of workload. As per the scale, the cut off point for the categories were kept at 25 out of 50(maximum value). People who score more than or equal to 25 are classified as high in the respective aspect of workload viz. Role overload, role distance and role stagnation.

#### **Table 3 here**

Table 3 shows the prevalence of role overload among the public health nurses. 931 out of 1237 of them have reported role overload. That means 75.26%(95% CI\*: 72.78, 77.59) of them have role overload as per the values they scored on the RODS scale. (\*Confidence Interval)

#### **Table 4 here**

Table 4 shows the prevalence of role stagnation among the public health nurses. 688 out of 1237 of them have reported role stagnation. That means 55.62%(95% CI: 52.84,58.37) of them have role stagnation as per the values they scored on the RODS scale.

#### **Table 5 here**

Table 5 shows the prevalence of role distance among the public health nurses. Only 149 out of 1238 of them have reported role distance. That means Only 12.04% (95% CI: 10.34,13.97) of them have reported role distance as per the values they scored on the RODS scale.

**Table 6 Here**

Statistically significant difference is found only in Role overload and stagnation. In case of role overload, the overload is increasing with age. On the other hand the role stagnation decreases with the age. However, role stagnation decreases with age is only statistically significant (Chi square test for trend  $p=0.004$ ).

**Figure 1 Here**

The above figure shows trend for workload for different age categories. The trend shows decreasing Role Stagnation aspect of workload with higher age. The trend shows an decreasing Role Stagnation aspect of workload with increase in age category.

**Table 7 Here**

Three aspects of workload namely role overload, stagnation and role distance are different for both sexes ( $p<0.05$ ). The Role over load is higher among women and the role stagnation and self role distance are higher among men.

**Table 8 here**

Statistically significant difference is found only in Role overload and self role distance ( $p<0.05$ ). The role overload is highest among the unmarried and the self role distance is highest among the unmarried.

**Table 9 here**

Based on the response, the role stagnation has an association with the monthly income. The respondents with lower income category are having minimal role stagnation compared to higher income (categories). (Table 9)

Table 10 shows the perception of family life is affected by the official work. The perception is associated with all the three components of workload, namely, role overload, role stagnation and self role distance ( $p<0.05$ ). This is also further confirmed by the trend emerging from the responses for all three components of workload (Chi square test for trend  $p<0.05$  for all the three namely, role overload, role stagnation, and self role distance).

**Table 10 here**

**Figure 2 here**

Figure 2 shows the trend of workload against their official work affect their family life. The trend shows decreasing workload for those who disagrees the official work affects their family life. This suggests those who feel their official work affects their family life have more workload.

Discussion: The trend suggesting the workload is experienced for those who feel their official work is affecting their family life.

**Table 11 here**

The perception of social life is affected by the official work are associated with all the three components of workload, namely, role overload, role stagnation and self role distance ( $p<0.05$ ). This is also further confirmed by the trend emerging from the responses for all three components of workload (Chi square

test for trend  $p < 0.05$  for all the three namely, role overload, role stagnation, and self role distance).

**Figure 3 here**

The above figure presents the trends of workload against the job affects their social life. The trend shows that decreasing workload for those who do not agree the present job affects their social life. This suggests those who agreed the social life affected by present job reported higher workload. Discussion: The trend is suggesting the workload is felt more to those who feel the job affects their social life.

**Table 12 here**

The perception that training helped in updating skills and knowledge is associated with all the three components of workload, namely, role overload, role stagnation and self role distance ( $p < 0.05$ ). This is also further confirmed by the trend emerging from the responses for all three components of workload (Chi square test for trend  $p < 0.05$  for all the three namely, role overload, role stagnation, and self role distance). Kindly refer the figure below.

**Figure 4 here**

The figure above shows the trend of workload against training help in upgrading skills and knowledge. The trend shows an increasing workload for those who disagree that the training helped in upgrading skills and knowledge. This suggests those who feel training helps them in their current job have less workload.

Discussion: The trend is suggesting the workload is felt more to those who feel the training they had did not help them in present job.

**Table 13 here**

Those who are doing additional work have higher workload in terms of role overload, role stagnation and self role distance ( $p < 0.05$ ).

All other variables such as number of children, family type, and years of experience have no association with all aspects of workload.

**Discussion**

Present study found the workload of public health nurses is high. This is in confirmation with other studies (Srinivasan and Sharan 2006, Nair and Sarma 2002). Introduction of new programmes added to their work. This is in confirmation with the Canadian study (Montour A. et al 2009) in which nurses find it difficult to manage when there are structural changes in rural health system, routine scheduling issues among nurses due to rise in vacant positions and other problems.

The prevalence workload among public health nurses in terms of RODS scale found to be high on two aspects role overload (75%) and role stagnation (56%). This finding is in confirmation with Queensland study (Hegny et al. 2004).

The role stagnation aspect of workload increases with age. This is in confirmation with the findings of an Australian study showing work and age related factors increase difficulties lead to perceived workload. (Fragar and Depczynski 2011). This was also reported in a United States study. (Molinari and Monserud 2008).

The workload per se is generally assessed in terms of quantum of work. On our study we used RODS scale, by assessing three aspects of workload, viz. role overload, role distance, and role stagnation. Analysis shown strong association of these three aspects with variables such as perception of work affects their personal and social life. The scale measures role overload, role stagnation and role distance based on the perceptions of their work. The association of three aspects with job affects family and social life suggests, passionate workers scored better on the scale. Workload is about perception not the quantum of work.

### **Conclusion**

The workload of public health nurses is reported to be high in all the five districts of Kerala. This is due to the introduction of newer programs. The public health nurses are the backbone of public health system in India. The system depends on them for delivery of all services. Introduction of new programs, assigning jobs which are not directly linked to service delivery are the causes for their dissatisfaction. Meetings and record maintenance consumes most of their time.

One more issue needs to be addressed is the poor promotional prospects for the JPHN and JHI. Many have expressed a need for better career path for them. This is the only thing which can keep their morale high. Presently there are number of positions in the next level which are remaining vacant for long. If the government takes a decision on filling them will improve the situation.

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## Tables

**Table 1 Number of health centres selected from five districts**

Name of district	No. of CHCs	No. of PHCs	No. of SCs	Total
Thiruvananthapuram	12(Out of 28)	44 (including 1 Medical College unit)	242	298
Alappuzha	10(Out of 20)	25 (including 1 Medical College unit)	141	176
Ernakulam	12(Out of 35)	29	207	248
Malappuram	14(Out of 15)	40	141	195
Wayanad	7( Out of 5)	21	131	159

**Table 2 Sample Size and sampling design N=1238**

Sl No	District	JPHN	JHI	Staff Nurse	LHS	LHI	Total
1	Wayanad	137	70	24	2	17	250
2.	Malappuram	126	69	20	7	29	251
3.	Ernakulam	117	52	31	8	28	236
4.	Trivandrum	124	62	25	6	38	255
5.	Alapppy	131	50	26	7	32	246
	Total	635	303	126	30	144	1238

**Table 3 Role Overload**

		Frequency	Percent	Valid Percent
Valid	<25	306	24.7	24.7
	>=25	931	75.2	75.3
	Total	1237	99.9	100.0
Missing	System	1	.1	
Total		1238	100.0	

**Table 4 Role Stagnation**

		Frequency	Percent	Valid Percent
Valid	<25	549	44.3	44.4
	>=25	688	55.6	55.6
	Total	1237	99.9	100.0
Missing	System	1	.1	
Total		1238	100.0	

**Table 5 Self Role Distance**

		Frequency	Percent	Valid Percent
Valid	<25	1089	88.0	88.0
	>=25	149	12.0	12.0
	Total	1238	100.0	100.0

**Table 6 Age category and RODS**

		Role overload			Role stagnation			Self role distance			
		Low	High	Total	Low	High	Total	Low	High	Total	
Age category	<=29	Count	17	37	54	20	34	54	48	6	54
		%	31.5	68.5	100.0	37.0	63.0	100.0	88.9	11.1	100.0
	30-39	Count	108	288	396	169	227	396	347	49	396
		%	27.3	72.7	100.0	42.7	57.3	100.0	87.6	12.4	100.0
	40-49	Count	115	448	563	236	327	563	494	69	563
		%	20.4	79.6	100.0	41.9	58.1	100.0	87.7	12.3	100.0
>=50	Count	66	158	224	124	100	224	200	25	225	
	%	29.5	70.5	100.0	55.4	44.6	100.0	88.9	11.1	100.0	
Total	Count	306	931	1237	549	688	1237	1089	149	1238	
	%	24.7	75.3	100.0	44.4	55.6	100.0	88.0	12.0	100.0	
P* Value		0.012			0.003			0.961			

\* Pearson Chi-Square, df 3

**Table 7 Sex and RODS**

			Role overload			Role stagnation			Self role distance		
			Low	High	Total	Low	High	Total	Low	High	Total
Sex	Female	Count	233	762	995	459	536	995	886	110	996
		%	23.4	76.6	100.0	46.1	53.9	100.0	89.0	11.0	100.0
	Male	Count	73	169	242	90	152	242	203	39	242
		%	30.2	69.8	100.0	37.2	62.8	100.0	83.9	16.1	100.0
Total	Count	306	931	1237	549	688	1237	1089	149	1238	
	%	24.7	75.3	100.0	44.4	55.6	100.0	88.0	12.0	100.0	
P* Value			0.029			0.012			0.030		

\* Pearson Chi-Square, df 1

**Table 8 Marital status and RODS**

			Role overload			Role stagnation			Self role distance		
			Low	High	Total	Low	High	Total	Low	High	Total
Marital status	Married	Count	259	836	1095	486	609	1095	971	125	1096
		%	23.7	76.3	100	44.4	55.6	100	88.6	11.4	100
	Un-married	Count	40	76	116	56	60	116	94	22	116
		%	34.5	65.5	100	48.3	51.7	100	81.0	19.0	100
	Others	Count	4	10	14	4	10	14	13	1	14
		%	28.6	71.4	100	28.6	71.4	100	92.9	7.1	100
Total	Count	303	922	1225	546	679	1225	1078	148	1226	
	%	24.7	75.3	100	44.6	55.4	100	87.9	12.1	100	
P* Value			0.035			0.348			0.050		

\* Pearson Chi-Square, df 2

**Table 9 Monthly income category and RODS**

			Role overload			Role stagnation			Self role distance		
			Low	High	Total	Low	High	Total	Low	High	Total
Monthly Income category in Rupees	Below 8000	Count	21	41	62	38	24	62	57	5	62
		%	33.9	66.1	100	61.3	38.7	100	91.9	8.1	100
	8000-10000	Count	29	123	152	55	97	152	129	23	152
		%	19.1	80.9	100	36.2	63.8	100	84.9	15.1	100
	10001-12000	Count	73	210	283	122	161	283	243	40	283
		%	25.8	74.2	100	43.1	56.9	100	85.9	14.1	100
	12001-14000	Count	58	210	268	125	143	268	234	34	268
		%	21.6	78.4	100	46.6	53.4	100	87.3	12.7	100
	14001-16000	Count	42	115	157	54	103	157	141	16	157
		%	26.8	73.2	100	34.4	65.6	100	89.8	10.2	100
	Above 16000	Count	82	229	311	153	158	311	281	31	312
		%	26.4	73.6	100	49.2	50.8	100	90.1	9.9	100
	Total	Count	305	928	1233	547	686	1233	1085	149	1234
		%	24.7	75.3	100	44.4	55.6	100	87.9	12.1	100
P* Value			0.172			0.001			0.372		

\* Pearson Chi-Square, df 5

**Table 10 Family life vs Official work and RODS**

			Role overload			Role stagnation			Self role distance			
			Low	High	Total	Low	High	Total	Low	High	Total	
Family life Vs official work	Strongly agree	Count	13	86	99	34	65	99	77	22	99	
		%	13.1	86.9	100	34.3	65.7	100	77.8	22.2	100	
	Agree	Count	55	273	328	131	197	328	280	49	329	
		%	16.8	83.2	100	39.9	60.1	100	85.1	14.9	100	
	Neither Agree/di	Count	36	134	170	77	93	170	148	22	170	
		%	21.2	78.8	100	45.3	54.7	100	87.1	12.9	100	
	Disagree	Count	144	366	510	238	272	510	464	46	510	
		%	28.2	71.8	100	46.7	53.3	100	91.0	9.0	100	
	Strongly disagree	Count	55	67	122	66	56	122	112	10	122	
		%	45.1	54.9	100	54.1	45.9	100	91.8	8.2	100	
	Total	Count	303	926	1229	546	683	1229	1081	149	1230	
		%	24.7	75.3	100	44.4	55.6	100	87.9	12.1	100	
	P* Value			<0.001			0.014			0.001		

\* Pearson Chi-Square, df 4

**Table 11 Social life Vs job responsibility and RODS**

			Role overload			Role stagnation			Self role distance		
			Low	High	Total	Low	High	Total	Low	High	Total
Social life Vs job responsibility	Strongly agree	Count	9	51	60	16	44	60	50	10	60
		%	15.0	85.0	100	26.7	73.3	100	83.3	16.7	100
	Agree	Count	48	242	290	118	172	290	241	50	291
		%	16.6	83.4	100	40.7	59.3	100	82.8	17.2	100
	Neither Agree/dis	Count	23	128	151	52	99	151	127	24	151
		%	15.2	84.8	100	34.4	65.6	100	84.1	15.9	100
	Disagree	Count	179	425	604	294	310	604	549	55	604
		%	29.6	70.4	100.0	48.7	51.3	100	90.9	9.1	100
Strongly disagree	Count	44	77	121	65	56	121	112	9	121	
	%	36.4	63.6	100.0	53.7	46.3	100	92.6	7.4	100	
Total	Count	303	923	1226	545	681	1226	1079	148	1227	
	%	24.7	75.3	100.0	44.5	55.5	100	87.9	12.1	100	
P* Value			<0.001			<0.001			0.001		

\* Pearson Chi-Square, df 4

**Table 12 Training helped in updating skills and knowledge and RODS**

			Role overload			Role stagnation			Self role distance		
			Low	High	Total	Low	High	Total	Low	High	Total
Training received	Strongly agree	Count	34	84	118	74	44	118	110	8	118
		%	28.8	71.2	100	62.7	37.3	100	93.2	6.8	100.0
	Agree	Count	212	570	782	397	385	782	713	70	783
		%	27.1	72.9	100	50.8	49.2	100	91.1	8.9	100
	Neither Agree/di	Count	22	119	141	44	97	141	116	25	141
		%	15.6	84.4	100	31.2	68.8	100	82.3	17.7	100
	Disagree	Count	31	123	154	28	126	154	123	31	154
		%	20.1	79.9	100	18.2	81.8	100	79.9	20.1	100
Strongly disagree	Count	7	32	39	5	34	39	25	14	39	
	%	17.9	82.1	100	12.8	87.2	100	64.1	35.9	100	
Total	Count	306	928	1234	548	686	1234	1087	148	1235	
	%	24.8	75.2	100	44.4	55.6	100	88.0	12.0	100	
P* Value			0.014			<0.001			<0.001		

\* Pearson Chi-Square, df 4

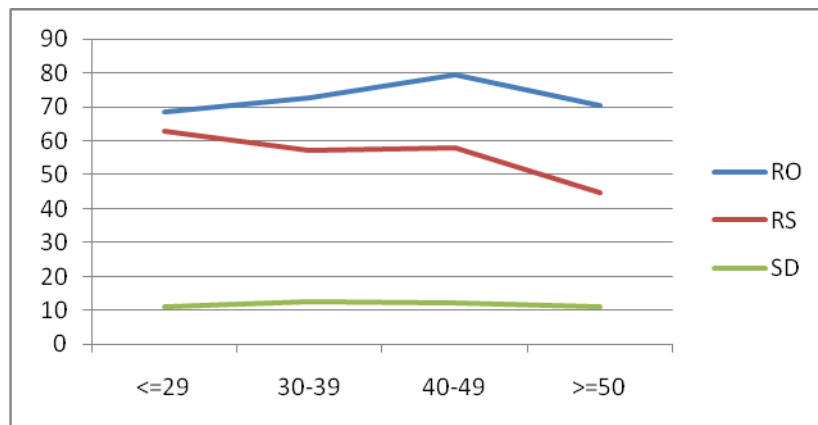
**Table 13 Additional responsibility and RODS**

			Role overload			Role stagnation			Self role distance		
			Low	High	Total	Low	High	Total	Low	High	Total
Do additional responsibility	Yes	Count	240	828	1068	461	607	1068	932	137	1069
		%	22.5	77.5	100.0	43.2	56.8	100.0	87.2	12.8	100.0
	No	Count	66	98	164	86	78	164	152	12	164
		%	40.2	59.8	100.0	52.4	47.6	100.0	92.7	7.3	100.0
Total	Count	306	926	1232	547	685	1232	1084	149	1233	
	%	24.8	75.2	100.0	44.4	55.6	100.0	87.9	12.1	100.0	
P* Value			<0.001			0.026			0.044		

\* Pearson Chi-Square, df 1

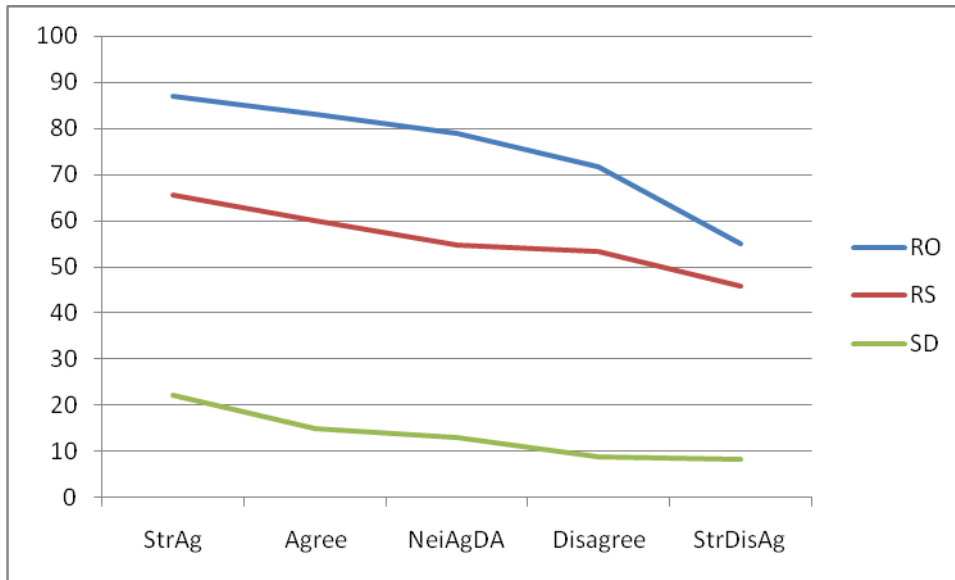
## Figures

**Figure 1 Trend for a age category and workload RODS**

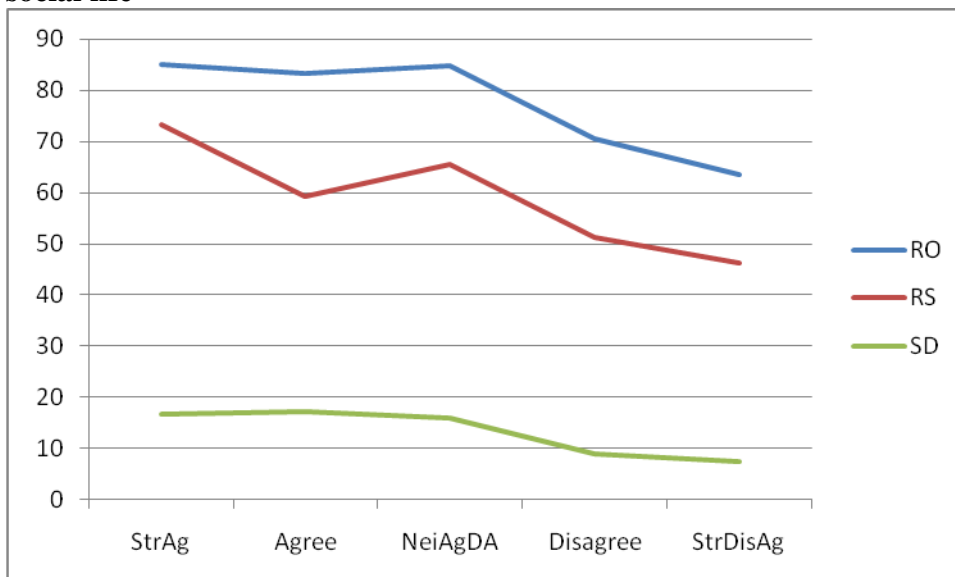




**Figure 2 Trend of workload(RODS) official work affects family life**



**Figure 3 Trend of workload (RODS) against job responsibility affects social life**



**Figure 4 Trend of workload (RODS) against training helped updating skills & knowledge**

