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RESEARCH ARTICLE

SOCIAL SUPPORT AND MEDICATION ADHERENCE AMONG THE ELDERLY WITH SELECT CHRONIC DISEASES AT A TALUK HOSPITAL IN ANEKAL

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ABSTRACT

Introduction: Medication non-adherence is common among elderly suffering from chronic diseases. This in turn leads to unwelcome health, social and economic consequences. (Marengoni *et al*., 2008; Balkrishnan, 1998; Hughes, 2004) One reason for non-adherence to medication could be poor social support. Social support is critical for those elderly who rely on family, friends, or organizations to assist them with daily activities, provide companionship, and care for their well-being. (Wu *et al*., 2008) Greater social support has been shown to be associated with improved health outcomes and healthier behaviour. (Wu *et al*., 2008; Stroebe, 2000)

Objectives: To study the association between social support and medication adherence, and the risk factors for medication non- adherence among elderly (>60years) suffering from select chronic diseases like diabetes mellitus, hypertension, osteoarthritis and COPD who seek care at the Taluk Hospital at Anekal.

Methodology: A cross sectional study was conducted with the study population being elderly aged >60 years with select chronic disease who seek care at asecondary level of care hospital at Anekal. Data was collected using pre-tested semi-structured questionnaire and standard tools namely the Multidimensional Scale of Perceived Social Support (MSPSS) and Morisky's Medication Adherence Scale (MMAS). Consecutive method of sampling was used. The estimated sample size was 138.

Results: Of the 138 elderly subjects, 64(46%) were males, 74(54%) were females. 74 (54%) elderly reported low social support and poor medication adherence was seen among 38(27%) of the elderly. Practical social support ($p<0.05$) and physical activity of <2 times a week ($p\leq0.05$) were significantly associated with good medication adherence.

Conclusion: Active involvement of family members in healthcare of elderly people would greatly improve medication adherence.

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INTRODUCTION

Ours is an ageing population. The proportion of elderly is rising in the world. In India, the elderly constitutes almost 8% of the population. According to the United Nation Population Division this number is expected to more than double to around 19% by the year 2050. (India's ageing population-Population reference bureau, 2012) This profound shift in the share of older Indians taking place in the context of changing family relationships and severely limited old-age income support brings with it a variety of social, economic, and health care policy challenges. (India's ageing population-Population reference bureau, 2012) This ageing population in-turn will have higher prevalence of chronic diseases such as diabetes mellitus, hypertension, osteoarthritis and COPD, etc. (Marengoni *et al*., 2008) Medications are frequently used in the elderly to improve quality of life, extend life-expectancy, and cure/mitigate disease. It is clear, however, that the elderly often fail to adhere to prescribed medications, leading to unwelcomed clinical and economic consequences. (Balkrishnan, 1998; Hughes, 2004; Murray *et al*., 2004) Medication non-adherence is the failure to take medications as prescribed. This may be willful or inadvertent, and can include failing to initially fill or refill a prescription; discontinuing a medication before the course of therapy is complete; taking more or less of a medication than prescribed; or taking a dose at the wrong time. (World Health Organization, 2003) Studies have repeatedly demonstrated that medication non-adherence is a common source of hospitalizations, morbidity, and mortality in a variety of populations and disease states. (World Health Organization, 2003; Botelho and Dudra, 1992; Wu *et al*., 2008) One important reason for medication non- adherence could be the lack of social support. Social support includes real or

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perceived resources provided by others that enable a person to feel cared for, valued, and be a part of a network of communication and mutual obligation. Social support can be critical for those older adults who rely on family, friends, or organizations to assist them with daily activities, provide companionship, and care for their well-being. (Stroebe, 2000) Greater social support has been shown to be associated with improved health outcomes and healthier behaviour. (Stroebe, 2000; Seeman, 2000) In this study, we look to study the relationship between perceived social support and the adherence to medication among elderly who are suffering from select chronic diseases. There are not many studies done in India let alone South India to assess the association between social support and treatment adherence. Hence there is scope to study this area of research further. Also, with this study we can try to establish a range of strategies to try and improve adherence among elderly.

Objectives

1) To study the association between social support and medication adherence among elderly with select chronic diseases at a secondary level of care hospital at Anekal.
2) To study the risk factors for non-adherence to medication in elderly with select chronic diseases at a secondary level of care hospital at Anekal.

MATERIALS AND METHODS

Elderly people (>60years) who seek care at the secondary level of care hospital at Anekal were our study population. We included all elderly aged >60 years who suffer from select chronic diseases such as diabetes mellitus, hypertension, osteoarthritis and COPD. Exclusion criteria were those elderly patients who were moribund, speech or hearing impaired and unable to give information. Subjects were selected by consecutive method of sampling. Informed written consent was taken. Structured interview schedule and standard questionnaires namely the Multidimensional scale of perceived social support and Morisky's eight item medication adherence scale were used, which are described below.

Structured interview schedule with 3 parts

The interview schedule is divided into 3 parts. The first part consists of the socio-demographic details of the elderly subjects, the second part is the Multidimensional Scale of Perceived Social Support, and the third part of the questionnaire includes Morisky's eight item medication adherence scale. The Multidimensional scale of Perceived Social Support (MSPSS) (Zimet, Dalhem, 1988) a brief, easy to administer self-report instrument containing twelve items rated on a seven-point Likert-type scale. It is meant to measure an individual's perception of how much he or she receives outside social support and has been tested on people from different age groups and cultural backgrounds and found to be a reliable and valid instrument. MSPSS consists of three sub-scales: Family, Friends, and Significant Others. Most investigations have revealed MSPSS to be a three-factor construct which demonstrates good to excellent internal consistency and test-retest reliability (with a Cronbach's alpha of 0.81 to 0.98 in non-clinical samples, and 0.92 to 0.94 in clinical samples. The Morisky's Medication Adherence Scale[12] (MMAS) is a generic self-reported, medication-taking behaviour scale, initially validated for hypertension but used for a wide variety of medical conditions. It has eight questions and is one of the most frequently used to assess patients' adherence to prescribed medicines in an outpatient setting. The test–retest reliability of eight items MMAS indicates excellent reliability and stability of the instrument with Spearman's rank correlation coefficient of 0.816 ($p<0.001$).

Statistical analysis

The data collected was entered in Microsoft Excel and analysed using SPSS version 20. Sociodemographic variables were described as frequencies and measures of central tendency. Data collected was analysed using descriptive statistics. Means and proportions were applied. Bivariate analysis was done using Chi square tests to assess the association between social support and medication adherence. All statistical tests were two-tailed and significance level was set at $p<0.05$

RESULTS

The demographic details of the participants are described in Table 1.

Table 1. Socio- demographic profile of the elderly

Variable	Frequency	Percentage
Age (in years)		
60-69	102	73.9
70-79	31	22.5
>80	5	3.6
Mean Age= 65.15years SD=6.196		
Gender distribution		
Male	64	46
Female	74	54
Highest education status		
No schooling	91	65.9
Primary school	26	18.8
Middle school	11	8
High school and above	10	7.2
Marital Status		
Currently married	136	98.6
Unmarried	2	1.4
Number of Children		
Nil	7	5.1
1-4	89	64.5
>5	42	30.4
Family Type		
Nuclear	45	33
Joint	56	40
Three generation	37	27
Number of family members		
1-4	68	49.3
>5	70	50.7
Head of the family		
Self/ spouse	103	75
Children	26	19
Other	9	6
Person paying for medicines		
Self/ spouse	77	55.8
Children	51	37
Other	10	7.2
Availing pension		
Yes	74	54
No	64	46

Table 1 describes the Sociodemographic profile of the elderly people included in the study. Majority of the elderly were between the ages of 60-69 years (73.9%), female (54%) and had no formal school education (65.9%). Majority of them belonged to joint family (40%) and declared themselves or their spouse to be the head of the family (75%). Around 55.8% of the elderly people were paying for their own medication while a similar number (54%) were found to be availing some form of pension.

Table 2. Description of lifestyle factors

Variable	Frequency	Percentage (%)
Perceived health status		
Healthy	65	47
Unhealthy	73	53
Meal habits		
Restricted	89	64.5
Unrestricted	49	35.5
Physical activity		
</= 2times a week	51	37
>/= 3 times a week	87	63
Smoking habit		
Currently smoking	18	13
Quit smoking	1	0.7
Never smoked	119	86.2
Alcohol Consumption		
Current drinker	7	5.1
Quit drinking	2	1.4
Never drank	129	93.5

Among the 138 elderly studied, only 47% of the elderly people considered themselves to be healthy. While assessing lifestyle habits it was found that a majority of the elderly consumed some restricted form of diet (64.5%), and 63% of the elderly exercised more than or equal to 3 times a week,13% of the elderly people were active smokers while 5.1% reported consuming alcohol regularly.

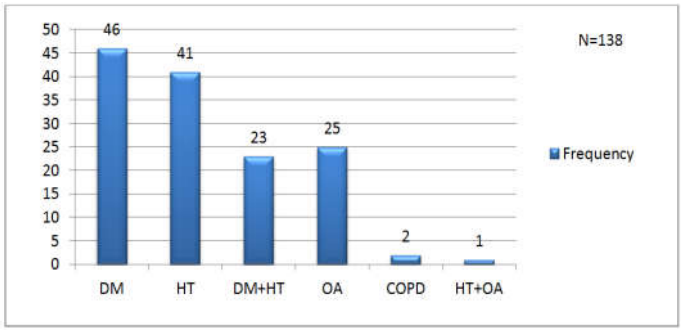

Figure 1. Morbidity profile of the elderly

Figure 1 shows the most common morbidity among elderly to be Diabetes mellitus (33.1%) followed by Hypertension (29.7%) and Osteoarthritis (18.1%)

Majority of the elderly were found to have lack of functional social support. The availability of someone to monitor their health condition, to accompany them to hospital and to help administer medication was poor. But, half of the elderly acknowledged the presence of someone who reminds them to take their medications regularly.

Table 3. Description of the disease and medications

Variable	Frequency	Percentage
Number of diseases		
1	114	82.6
>/=2	24	17.4
No of years since diagnosis		
<=5	107	77.5
6-10	13	9.4
>=11	18	13
No of hospitals consulted		
1	98	71
>=2	40	29
No of drugs per day		
1	79	57
>=2	59	43
No of times drug taken per day		
1	74	54
>=2	64	46
Injectable use		
Yes	43	31
No	95	69

Table 4. Practical social support

Question	Yes	No
Do you have someone who monitors your condition?	67(49%)	71(51%)
Do you have someone to accompany you to hospital?	62(45%)	76(55%)
Do you have someone to help administer medication?	60(43%)	78(57%)
Do you have someone who reminds you to take medication?	69(50%)	69(50%)

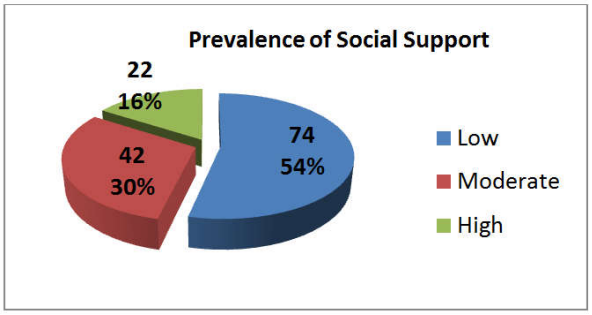

Figure 2. Prevalence of social support among elderly people

Of the 138 elderly people, 22(16%) of the elderly had high social support with a MSPSS score of greater than 69 while around 42(30%) elderly had moderate social support (49-68 score) and 74(54%) of the elderly people had low social support with MSPSS score of less than 48.

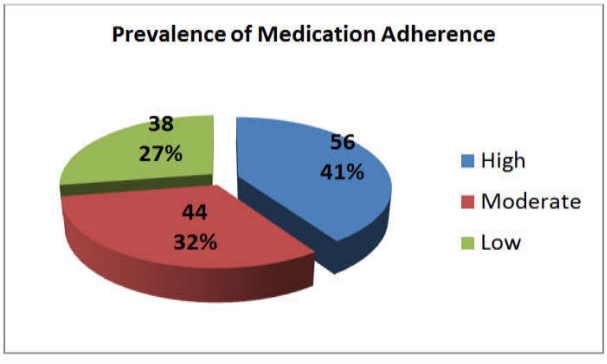

Figure 3. Prevalence of Medication Adherence among elderly people

According to Figure: 3 around 56(41%) of the elderly had high adherence to medication with a MMAS score of 8 while 44(32%) and 38(27%) of the elderly had moderate and low medication adherence respectively.

Table 5: Associations

Table 5.1. Between variables and Social Support

Variables		Social support			Chi square value	p value
		Low	Moderate	High		
Perceived health status	Unhealthy	47	21	5	7.22	0.027*
	Healthy	27	31	7		
Meal habits	Irregular	32	16	1	6.313	0.043*
	Regular	42	36	11		
Number of hospitals visited for ailment	<2	45	26	27	10.105	0.067
	≥2	11	18	11		

Among the variables; those elderly who perceived themselves to be healthy and had regular meal habits had high social support. This association was found to be statistically significant.

Table 5.2. Between variables and medication adherence

Variable	Medication adherence	Low	Moderate	High	p value
Physical activity	≤2times/week	13	16	22	0.003*
	≥3times/week	43	28	16	
Type of family	Joint	27	16	13	0.056
	Nuclear	18	10	17	
	Others	11	18	8	

Among the variables; those elderly who regularly undertook some form of physical activity more than 3 times a week had lower medication adherence, alternatively those elderly who exercised for less than 2 times a week had high medication adherence. Those elderly who belonged to joint families had lower medication adherence however this association was not statistically significant.

Table 5.3. Between Practical social support and Medication adherence

Variable- Someone to		Good Adherence	Chi square value	p value
Monitor the condition	Yes	25 (35.2%)	16.785	0.00*
	No	13 (19.4%)		
Administer medicines	Yes	33 (42.3%)	22.531	0.00*
	No	5 (8.3%)		
Accompany to hospital	Yes	28 (36.8%)	15.106	0.00*
	No	10 (16.1%)		
Remind to take medicines	Yes	26 (37.7%)	9.820	0.07
	No	12 (17.4%)		

There was a statistically significant association found between practical social support and medication adherence.

DISCUSSION

Among the 138 elderly subjects studied, we found that 74(54%) had low perceived social support. Also, 38(27%) of the elderly subject had low medication adherence. In our study we found that 41% of elderly people had high medication adherence. In a study conducted among 100 community-dwelling adults 65 years of age and older it was found that the average rate of medication adherence was 59% however only 10% of the elderly were adherent to their entire medication regimen while 90% were non adherent to atleast one medication. (Turner *et al*., 2012) This difference in medication adherence rate from our study may be attributed to the fact that our study was hospital based and hence we expect the elderly to have better adherence to medication because of their better health seeking behaviour. In another prospective cohort study conducted among 1549 community dwelling patients over 65 years old who were taking medications for coronary heart disease, hypertension, diabetes, and/or hyperlipidaemia it was found that overall 40% of patients had low medication adherence. (Gazmararian *et al*., 2006) In our study we found that 54% of the elderly people had poor perceived social support while only 16% had good perceived social support. In our study we found that practical social support was associated with high medication adherence. Similar findings were reported from a meta-analysis of 50 studies looking to see the association between social support and medication adherence. It was found that a greater degree of practical social support was most consistently associated with greater adherence to medication. However, evidence for structural or emotional support was less compelling. (Danielle Scheurer *et al*., 2012) In an unusual finding, those elderly who exercised for less than 2 times a week showed higher medication adherence as compared to those who exercised for greater than 3 times a week.

This may be attributed to the fact that elderly who were unable to follow some form of physical activity regularly due to varied reasons including frailty were more anxious to follow medication advice to keep their diseases under control. However those elderly who did follow more frequent physical activity took the liberty of skipping their medications as they felt their disease was already under control due their regular physical activity. Structural support, as defined by cohabitation or support from a spouse/significant other was not consistently associated with medication adherence. This implies that the mere presence of a spouse/partner is not sufficient to affect behaviour. Practical support—as defined by the number of sources (or satisfaction with the sources) of practical support for medication reminders, household responsibilities, or transportation—was consistently associated with improved medication adherence. Improved medication-taking behaviour was most closely associated with assistance in the very process of purchasing or administration of therapy. The one study that evaluated practical support using multivariate techniques found a dose-response relationship; an increased number of sources of practical support were associated with increased adherence. (Molloy *et al*., 2008)

Conclusion

Prevalence of adherence to medication among the elderly with select chronic diseases seeking health care at the Taluk Hospital at Anekal was found to be 40.6%. Better practical social support was found to be associated with good adherence to medication. However, no association was found between Perceived Social Support & medication adherence.

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Conflict of Interest Disclosure

The author declares that there is no conflict of interest regarding the publication of this paper.

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REFERENCES

Available at http://www.ncbi.nlm.nih.gov/pubmed/15382959

Balkrishnan R. 1998. Predictors of medication adherence in the elderly. *ClinTher.,* 20:764–771.

Botelho RJ, Dudrak R 2nd. 1992. Home assessment of adherence to long-term medication in the elderly. *J FamPract*., 35(1):61-65.

Danielle Scheurer *et al*. Association Between Different Types of Social Support and Medication Adherence ;http://www.ajmc.com/journals/issue/2012/2012-12-vol18-n12/association-between-different-types-of-social-support-and-medication-adherence

Gazmararian JA *et al*. 2006. Factors associated with medication refill adherence in cardiovascular-related diseases: a focus on health literacy; *J Gen Intern Med*., Dec; 21(12):1215-21.

Hughes CM. 2004. Medication non-adherence in the elderly: how big is the problem? *Drugs Aging*., 21:793–811.

India's ageing population- Population reference bureau 2012; http://www.prb.org/Publications/Reports/2012/india-older-population.aspx

Marengoni A, Winblad B, Karp A, Fratiglioni L. 2008. Prevalence of Chronic Diseases and Multimorbidity Among the Elderly Population in Sweden. *American Journal of Public Health*, 98(7):1198-1200. doi:10.2105/AJPH.2007.121137.

Molloy GJ, Perkins-Porras L, Bhattacharyya MR, Strike PC, Steptoe A. 2008. Practical support predicts medication adherence and attendance at cardiac rehabilitation following acute coronary syndrome. *J Psychosom Res*., 65(6):581-586

Morisky DE, Green LW, Levine DM. 1986. Concurrent andpredictive validity of a self-reported measure of medicationadherence. *Med. Care*, 24(1):67–7

Murray MD *et al*. 2004. A conceptual framework to study medication adherence in older adults. *Am J Geriatr Pharmacother*., 2:36–43

Seeman TE. 2000. Health promoting effects of friends and family on health outcomes in older adults. *Am J Health Promot*., 14:362—70.

Stroebe W. 2000. Moderators of the stress-health relationship. In: Stroebe W. Social psychology and health. Philadelphia, PA: Open University Press; 236--73.

Turner A, Hochschild A, Burnett J, Zulfiqar A, Dyer CB. 2012. High prevalence of medication non-adherence in a sample of community-dwelling older adults with adult protective services-validated self-neglect; Drugs Aging. Sep;29(9):741-9

World Health Organization. Adherence to long-therapies: Evidence for action. Geneva 2003. Available at - http://www.who.int/chp/knowledge/publications/adherence_introduction.pdf

Wu JR, Moser DK, Chung ML, Lennie TA. 2008. Predictors of medication adherence using a multidimensional adherence model in patients with heart failure. *J Card Fail*., 14(7):603-614.

Zimet, Dalhem, 1988. Multidimensional scale of perceived social support; *Journal of Personality Assessment*, 52(1), 30-41.

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