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Depression among geriatric population; the need for community awareness

Sherin Susan Paul N.[a,*], Prashanth Hanumanthappa Ramamurthy[b], Biswajith Paul[b], Muthu Saravanan[c], Santhosh S.R.[c], Dolorosa Fernandes[c], Rita Isaac[b]

[a] Pushpagiri Institute of Medical Sciences & Research Centre, Thiruvalla, Kerala, 689101, India
[b] Rural Unit for Health and Social Affairs (RUHSA), Christian Medical College, Vellore 632032, Tamilnadu, India
[c] Department of Community Medicine, Christian Medical College, Vellore 632004, Tamilnadu, India

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ABSTRACT

Objectives: To measure the prevalence of depression among the rural elderly population of North Tamilnadu in India and to identify the associated social factors.
Methods: A community based cross sectional study was carried out among those aged 60 years and above. The data was collected from 162 consenting participants, who were selected through a multi staged cluster sampling, using a structured interviewer administered questionnaire and Geriatric depression scale (short form) and prevalence was calculated. A binary logistic regression was done to identify the independent association of risk factors with depression.
Results: The study found the prevalence of old age depression as 52.5% (95% CI: 44.7-60.3) with factors low socio economic status, increasing age and single status posing strong independent risk.
Conclusion: The authors advocate community based support systems in rural areas which will increase the social interaction and inclusiveness of the aged.

1. Introduction

Depression among the elderly population in India has been recognized as one of the major public health problems with a prevalence of 8 to 22%. It causes significant suffering and accounts for 5.7% of the years lived with disability (YLDs).[1–4] To make matters worse, it has been reported that in many cultures and societies, deteriorating mental status, say it dementia or depression, has been perceived as a part of normal ageing thereby failing to avail prompt treatment that will improve the quality of life.[5] Depression among aged may often go undiagnosed, especially in rural India where symptoms of mental illnesses are entangled with myths, superstitions, taboos and ignorance.[6] Moreover psychiatric illness causes considerable stigma that strip them off their dignity and results in isolation and hopelessness.[7] An annual suicide rate of 189 per 100,000 among those aged above 55 years reported from certain parts of rural South India warrants the need for active detection and treatment of depression to reduce suicide rates among the old age population.[8,9] The primary objective of this study was to measure the prevalence of depression among old age in a sample population residing in the rural parts of North Tamilnadu and to identify the significant risk factors to recommend and implement preventive measures.

2. Method

A community based cross sectional study was carried out among those aged 60 years and above residing in a rural block of North Tamilnadu. The total population of this block is 128,033. It is a 100% rural area. Majority of the block residents follow Hindu religion and about 3% belongs to other religions including Muslims and Christians. Most of the inhabitants in the block live on agriculture linked occupations. Some of the other occupations are weaving, running poultry farms, dairy industry and “Beedi” (country cigarettes) making. The overall literacy rate is 64% with a male literacy rate of 73.4% and a female literacy rate of 57.4%. The data was collected from 162 consenting participants using a structured interviewer administered questionnaire who were selected by a multi-staged cluster sampling technique, where simple random sampling was used to select 9 villages and within each village 18 participants were chosen by systematic random sampling. The questionnaire covered the socio demographic characteristics including the age, gender, marital status, type of family, socio economic status using modified Kuppuswamy scale (2014), current working status, source of income, other potential causes of depression like co-morbidities, not having family support and Geriatric depression scale short form (GDS SF) for measuring the prevalence of depression. Those who get a score of 6 to 10 is suggestive of depression

* Corresponding author.
E-mail address: pushpagiriceu@pushpagiri.in (N. Sherin Susan Paul).

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requiring further investigation and a score more than 10 is almost always depression when reassessed by diagnostic scale. Studies have shown the sensitivity and specificity of GDS SF scale to be between 70–80% and 75–78% respectively, with high correlation in differentiating depressed from non-depressed.[10–12] The validated Tamil version of GDS SF that was used in this study has a sensitivity and specificity of 80% and 47.6% respectively.[13] In this study, we have reported the prevalence of depression in the community taking a score more than 5 as the cut off.

Statistical analysis: The data entry was done using Epi-Info 7.0 and analyzed using SPSS (SPSS Inc. Released 2007. SPSS for Windows, Version 16.0. Chicago, SPSS Inc.). Descriptive statistics include frequency and percentages for categorical variables and mean and standard deviation for the continuous variables. Chi square was used to assess the association between potential risk factors and depression. The strength of association between risk factors and depression was checked by calculating prevalence odds ratio with 95% confidence interval. A binary logistic regression analysis was done including those factors that had a significant association with depression at 20% probability level or less in bivariate analysis, to check for its independent association with depression adjusting for confounders and covariates. In the final regression model, the level of statistical significance was set at 0.05.

3. Results

The mean age of the participants was 68.7 years (SD 5.5) with minimum age being 60 and maximum age being 86. The socio demographic details of the participants are shown in Table 1. About 50% (80 out of 162) of the participants had chronic morbidities including hypertension in 31.9% and diabetes in 25.1% of them. Other diseases included asthma, chronic obstructive pulmonary disease (COPD), heart diseases and filariasis. The prevalence of depression among the study participants as measured by geriatric depression scale was 52.5% (95% CI: 44.7-60.3). Among them 37.2% got a score between 6 to 10 and 17.3% had a score 11 and above. The correlates of depression in the participants are shown in Table 2. The variables significantly associated with depression included increasing age (OR 2.4, 95% CI: 1.2-4.7, p 0.01), female gender (OR 2.46, 95% CI: 1.2-4.7, p 0.006), single status, which included those who were unmarried and widow/widowers, (OR 5.2, 95% CI: 2.6-10.2, p < 0.001), illiteracy (OR 3.1, 95% CI: 1.6-5.8), p 0.001), not working (OR 2.5, 95% CI:1.3-4.9, p 0.005), accessing old age pension (OR 2.5, 95% CI: 1.3-4.6, p 0.01), low socio-economic status(OR 4.3, 95% CI: 2.2-8.4), p < 0.001). In the multivariate analysis using binary logistic regression, we tested independent association between increasing age, being single, low socio-economic status, access to old age pension and gender. The 3 models showed SES, increasing age, single status had statistically significant independent association with depression (Table 3) whereas female gender and receiving old age pension that were shown as risk factors were confounded by single status of women and poverty (Table 3).

Table 1
Socio demographic details of the study participants (N = 162).

Category		Number (%)
Age	< 70	108(66.7)
	> =70	54(33.3)
Gender	Male	95 (58.6)
	Female	67 (41.4)
Marital Status	Currently married	92 (56.8)
	Widow/Widower	64 (39.5)
	Unmarried	6 (3.7)
Literacy	Illiterate	66 (40.7)
	Can read	36 (22.2)
	Can read and write	60 (37.1)
Type of Family	Nuclear	100 (61.7)
	Joint/extended	62 (38.3)
Socio Economic Status (SES)*	Lower lower	12 (7.4)
	Upper Lower	84 (51.8)
	Lower Middle	55 (34.1)
	Upper Middle	11 (6.8)
	Upper	0
Source of Income	Pension(retirement/old age)	84 (51.8)
	Dependant on Others	77 (47.5)
Working Status	Currently Working	58(35.8)
	Not Working	104 (64.2)

Note. *Socioeconomic status by modified Kuppuswamy scale 2014.

4. Discussion

In this study, we found that 52.5% (95% CI: 44.7-60.3) of the elderly population above 60 years of age had symptoms of probable depression with 17.3% having highly suggestive symptoms and will almost be certain to get a diagnosis of depression, if diagnostic scale was administered. Studies from different countries also have shown that the point prevalence of depression among community dwelling old age population ranges between 10% to 20%[14,15] and in the Indian subcontinent, the prevalence of old age depression has been reported to be between 20% and 50%.[16–19] The high prevalence underscores the importance of ongoing screening and attention to depression among the elderly population.

Of the risk factors investigated, poverty and single status found to be the most significant risk factors associated with depression among the elderly population and increasing age only had a slight risk for developing depression. The studies that were done in different settings looking into association between age and depression gave mixed results.[20,21] Similarly female gender was also not shown to have an independent association with depression in old age in this community. Study results from other sites have shown that elderly women had a greater likelihood of transitioning from non-depression to depression and lesser likelihood of transitioning from depression to non-depression.[22,23] Logically we may assume that access to old age pension will have a protective effect on depression. In our study we found that age, gender and access to pension were significantly confounded by single status, the most significant risk factor for depression. Those who are single and widowed are more eligible for old age pension in India and therefore in the univariate analysis access to old age pension was shown to be a risk factor.[20] A barrage of evidence suggest that single female is significantly associated with geriatric depression; but the gender difference become more blurred with the increase in age.[21–23] Further the odds of depression among those belonging to low SES were 3.125 times higher than those with better socioeconomic status (p value < 0.01). Research in other settings have found that those who are impoverished are at a greater risk of being depressed as it will cause an increase in stress, worry, the fear of making the ends meet and the feeling of loss of control over one's life.[24,25] Also poor have lesser access to social activity which is one of the major buffer for poor mental health as they are struggling to cope with their difficult life situations, thereby cutting on seemingly 'non- essential' social activities.[25]

5. Conclusions

As old age populace constitutes nearly 8% of the total population in India, which is 100 million in sheer numbers and is expected to grow further in the years ahead with nearly one third of them living below poverty line, there is an urgency in introducing feasible interventions to improve the quality of life of poor elderly population in the country. Recognising geriatric depression as a major health problem in the rural communities in India and identifying poverty, poor social security and single status as the major risk factors is the first major step towards tackling the issue. Further research should be carried out to identify the role of social and community support in mitigating the effect of poverty and loneliness on the elderly population especially in the rural areas

Table 2
Bivariate analysis for association between geriatric depression and risk factors age, gender, marital status, socio economic status (SES), current working status, literacy status and access to old age pension.

Variables		Depression n (%)	No Depression n (%)	Chi Square	P- value	Odds Ratio (95% CI)
Age	> =70	36(66.7)	18(33.3)	6.5	0.01	2.4(1.2–4.7)
	< 70	49(45.4)	59(54.6)			
Gender	Female	44(65.7)	23(34.3)	7.54	0.006	2.46(1.2–4.7)
	Male	41(43.2)	54(56.8)			
Marital Status	Single	52(74.3)	18(25.7)	22.01	< 0.001	5.2(2.6–10.2)
	Currently married	33(35.9)	59(64.1)			
SES	Low	64(66.7)	32(33.3)	19.04	< 0.001	4.3 (2.2–8.4)
	Middle	21(31.8)	45(68.2)			
Current Working Status	No	63(60.6)	41(39.4)	7.6	0.006	2.5(1.3–4.9)
	Yes	22(37.9)	36(62.1)			
Literacy Status	Illiterate	45(68.2)	21(31.8)	11.02	0.001	3.1(1.6–5.8)
	Literate	40(41.7)	56(58.3)			
Family support	Support absent	27(69.2)	12(30.8)	5.79	0.016	2.5(1.2–5.4)
	Support present	58(47.2)	65(52.8)			
Old age Pension	Yes	53(63.1)	31(36.9)	7.9	0.005	2.5(1.3–4.6)
	No	32(41.1)	46(58.9)			

Table 3
Independent association between geriatric depression and risk factors including age, gender, socio economic status, access to old age pension and marital status – Logistic regression model.

Risk factors		B	Sig.	Odds ratio(95% CI)
Model 1	Receiving old age pension	0.740	0.030	2.096(1.076–4.08)
	Age	0.096	0.004	1.100 (1.031–1.174)
	Gender (female)	0.871	0.012	2.390 (1.207–4.735)
Model 2	Receiving old age pension	0.656	0.065	1.928 (0.96–3.871)
	Age	0.083	0.016	1.087 (1.016–1.163)
	Gender (female)	0.697	0.057	2.008 (0.979–4.117)
	Socio-economic status	1.249	0.001	3.487 (1.711–7.106)
Model 3	Receiving old age pension	0.436	0.242	1.546 (0.745–3.212)
	Age	0.073	0.042	1.075 (1.003–1.153)
	Gender (female)	0.525	0.170	1.690 (0.798–3.579)
	Socio-economic status	1.140	0.002	3.125 (1.502–6.504)
	Marital status (single)	1.140	0.003	3.127 (1.465–6.671)

that will help the policy makers in establishing relevant intervention programs. We recommend that feasible support systems like senior citizens' day care centers for social interactions with peer group combined with recreational activities should be promoted in rural communities.[26]

Community based support system is the way forward and should be actively encouraged by the government so that our society can grow old in good health. The suggestions for support are provisions of various facilities like senior citizens' day care centers, meal delivery, assisted living facilities that should be developed with the active involvement and contributions from the community. The active community participation will reduce the financial burden of the government and will help in developing programs and systems, custom made for the beneficiaries, taking into account their cultural practices and providing the elderly population a familiar environment to live in. The studies done in other countries have also shown that social support improve cognitive function and there by better quality of life of the aged.[26–28]

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Conflict of Interest

None.

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