

# "Suicidal Ideation among rural aged "



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**Abstract-** A study of suicidal thoughts among the aged was conducted in seventeen villages under a rural PHC. ICMR scale for socio-economic status, Khatri's scale for family jointness, Family Integration Assessment Schedule, Social Integration Assessment Schedule, Proforma for suicidal ideations and Proforma for suicide counters were used. Among the 603 seniors, 238 nurtured suicidal thoughts. Being a woman, being widowed, poor socio-economic background, family neglect, social exclusion, psychiatric disturbances and subjective unhappiness made them vulnerable. Prevalent Suicide counters were studied. A multi-level intervention by village health workers, PHC medical officer and mental health professionals is envisaged.

**Keywords:** \_Suicidal Ideations – Rural – Geriatric population – Psychosocial causes – Suicide counters – Multi-level intervention.

## **INTRODUCTION:**

Suicidal ideas form an essential link in the evolution of an individual's suicidal behaviour and constitute the vulnerable point for successful intervention. The cognitive cascade initiates from a sense of Life-weariness and progresses towards Death-wishes, Suicidal ideations, Suicidal plans, Self-harm, Attempted suicide and Suicide (Jegannathan, 2014). Negative life events, psychosocial stressors, personality factors and lack of resources play a role in summing up to ideas of hopelessness (Hawton, Saunders and O'Connors, 2012). In the absence of suicide-counters and a mature understanding of cultural concepts of life, death and suicide, suicidal ideations flourish into further planning, eventuating into self-annihilating behaviour. Nock et al (2008) observed that within the first year after the onset of suicidal thoughts, the risk for attempted suicide increased by 170 times.

Suicidal ideations are more prevalent among the elderly than in the general population because of limitations in biological, psychological and social domains (Heisel, 2004). Ageing is associated with physical limitations and functional disabilities due to normal physiological changes and due to increased occurrence of systemic illnesses. Cognitive decline, dependency, empty-nesting, loss of loved ones and reduced coping contribute to psychological vulnerabilities (Conejero et al, 2018). Compromise with family and social cohesion, financial shortcomings and personal dissonance with prevailing cultural attributes end up in varying degrees of social exclusion. Despite many hurdles, most of the elderly mature into a healthy 'eugeria', enabled by consistent adaptability, a healthy social integration and an abiding cultural ethos about their functional role.

In a community survey of 21 countries, Borges et al, (2010) reported a lifetime prevalence of 9%. Occurrence is higher among the aged population. Sirey et al (2008) reported that 13.4% of home-bound aged population nurtured active or passive suicidal ideations. Terminal illnesses, diseases marked by intolerable pain, depression and neurocognitive disorders augmented the possibility of such ideas. Other significant contributory factors included social exclusion, hopelessness, impulsivity and bereavement (Almeida et al, 2012; Trivedi et al, 2014). Yet, only limited number of individuals voluntarily expressed such ideas and the non-communication endorsed the higher incidence of suicidal acts by the aged population (Ono et al, 2001; Ahmedani, 2014).

The pivotal significance of suicidal ideations in ultimate suicidal behaviour needs to be explored in detail. The present study aims to understand the occurrence of such ideas among the rural aged, the determinants of their emergence in an individual and the prevalent native processes in their resolution.

## **Materials and Methods:**

Need for a detailed study on geriatric suicide behavior was evident when the authors were working as faculty in Suicide Prevention Clinic, Department of Psychiatry, Madurai Medical College, Madurai. Varied dimensions of suicide-psychopathology, poor applicability of diagnostic nosology, ill-defined doctor-patient hierarchy and issues in psychotherapeutic management marked the challenges of elderly suicidal behavior and its therapeutic resolution. Our patients were mostly from rural domicile. The background factors crystallized the necessity of a geropsychiatric epidemiological survey in their native habitat. Emphasis was on prevention. A clinical exploration on the occurrence of suicidal ideations and their varying severity; their bio-psycho-social correlates and their native resolution was planned.

The study was conducted in the areas under Primary Health Center at Kallanthiri situated 16 Km from Madurai. Spread over around 200 square kilometers, it contained 37 panchayats, 194 villages and 17 sub-centers. Each sub-center catered to about 5000 to 6000 population. One village was chosen randomly from areas served by each of the 17 sub-centers, covering 12% of the PHC population of 1,03,478. Helped by PHC staff, a door to door survey was done by a team of psychiatrists (Dr. PSRG and SS) and a Clinical psychologist (Mr. N. N). The team visited the villages five times in a week. The subjects were chosen on the following criteria:

1. Individual should be 60 years and above. Age was determined either by available records or with help of information culled out from others.
2. The subject should be a permanent resident of the village at least for the past one year.

Each individual was initially evaluated physically by Drs. PSRG and SS. Physical ailments if any, their present management and future directions including regular follow-up at the PHC were attended to. Gradual extension into psychological evaluation with or without any diagnostic formulation, details of their personal, family and social functioning and ultimately about their concepts of life, death and suicide constituted the interview. Details of suicidal ideations, longevity of such ideas, severity of intentionality, hopelessness, planning, lethality of the modality and other related details were learnt through direct questioning. The assessment was essentially a clinical psychiatric evaluation.

During clinical interviews, quantitation of certain dimensions of observations enabled understanding their inter-relatedness much better. Kliem et al (2017) observed that though clinical interviews were ideal, inventories consumed less time and were more practical. In a comparison of 14 suicide attitude scales and 15 suicide ideation scales Ghasemi et al (2015) underlined the significance of local cultural settings. The authors noted the lack of any gold standard scales to study suicidal ideations and suggested that cross-cultural dimensions should be considered in the study of ethnic populations. The tools used in the present study had been validated for the native population and had been regularly in use. The team members had been regularly using the scales and schedules and the inter rater reliability was good.

The following tools were used in the study:

1. ICMR scale for socio-economic status: This scale has been extensively used in Indian research. It considers education, monthly income, caste and occupation as areas of quantification. Based on the scores, individuals are classified into five levels; with I representing the highest and V marking the lowest status.
2. Khatri's scale for family jointness (1970): The scale uses four categories of information to identify the jointness of the families; Residence, Pooling of financial resources, Property and Decision-making. Based on the scores, families are classified into five groups from Completely joint to Not at all joint.
3. Family Integration Assessment Schedule (ICMR, 1984): The schedule identifies four items; Status in the family, Living lonely, Shifting of residence and Bereavement. Integration of individuals with the family is grouped into five levels ranging from Isolated to Well integrated.
4. Social Integration Assessment Schedule (ICMR, 1984). Social integration factors in five items; Restriction due to loss/lack of social contacts, Number of friends/relatives, Communication, Restriction due to ill health and Intensity of activity. Individuals are classified into five levels ranging from Socially isolated to Socially well integrated.
5. Proforma for suicidal ideations (Venkoba Rao and Nammalvar, 1979). Proforma considers the Presence of such ideas, Reasons, General satisfaction about life, Future goals, Desire to live, Duration of such ideas and Frequency of their occurrence. Suicidal ideas were classified into five levels from Life Weariness to actual enactment of the idea.
6. Proforma for suicide counters (Venkoba Rao and Nammalvar, 1979). Presence of suicide counters such as need for continuance of financial support to family, moral values, religious concepts and ethical issues was observed. Idiosyncratic observations by individuals also were noted and included.

Suicide is a very delicate area of enquiry and the interviewers were sensitive to approach the issue with empathy and understanding. Discussions were one to one unless help was needed. Interviews were conducted in more than one session if needed. The survey was completed in two months.

The data was analyzed with simple statistical methods such as enumeration, comparison of numerical data and  $\chi^2$  test.

### Results:

Among the seventeen villages with a population of 12580, 603 individuals (4.8%) were aged above 60 years. Among them, 462 (77%) were aged between 60 and 69 years; 120 (20%) between 70 and 79 years; 19 (3%) between 80 and 89 years and 2 (.03%) above 90 years. Women (N = 379; 63%) outnumbered men (N = 224; 37%). They were more often widowed or living alone than men ( $\chi^2=118.95$ ;  $df=1$ ,  $p < 0.001$ ). There were 110 individuals (18%) without any progeny. Three fourths (N = 462; 77%) were living with family members and the rest (N = 141; 23%) were living alone without any family support. All of them evinced some physical ailment with or without disability. Correctible visual difficulties (N = 484; 80%) and joint pain with locomotor problems (N = 156; 26%) were the commonest and many suffered from more than one physical problem. Psychiatric disturbances were seen in 68 (11%) persons, including depression (61), paraphrenia (2), dementia (2), anxiety (2) and atypical grief (1).

Suicidal ideations were observed among 238 (39%) persons. Ideations were varied in their degree of conviction from a passing idea to suicidal attempt (Table 1).

**Table 1. Nature of suicidal ideations among the rural aged.**

Suicidal ideations	Present (N = 238)	% (N = 603)
Life weariness; Life is not worth living.	191	32

Passive suicidal ideations.	16	03
Active suicidal ideations.	26	04
Elaborate planning	03	0.004
Attempted suicide	02	0.003

Those without any such thinking were taken as controls (N = 365; 61%). Socio demographic details of both groups were compared (Table 2). Both groups did not differ from each other in their age-distribution. But, being a woman, being widowed and a poor socio economic background predisposed them significantly to the risk. Presence of the spouse, having a progeny and living with the family reduced the occurrence of suicidal thoughts.

**Table 2. Comparison of socio-demographic details of suicide ideational group with those of controls.**

Socio-demographic details	Suicidal ideations		Statistical significance
	Present (N = 238)	Absent (N = 365)	
Age: 60 – 69 years.	181	281	$\chi^2 = 0.33$
70 – 79 years.	48	72	
80 years and above.	09	12	
Gender: Men	64	160	$\chi^2 = 17.72^*$
Women	174	205	
Marital Status: Living with spouse	72	204	$\chi^2 = 38.16^*$
Widowed, separated or single	166	161	
Progeny: Present	177	316	$\chi^2 = 14.39^*$
No children	61	49	
Living status: Living alone	88	53	$\chi^2 = 40.54^*$
Living with family	150	312	
Socio-economic status <sup>#</sup> : I and II	04	11	$\chi^2 = 19.02^*$
III	14	64	
IV and V	220	290	

# Socio-economic status was assessed with ICMR Scale.

\*p < 0.001

Table 3 showed that among those who lived with their families the jointness did not furnish any significant protection. Whatever be the type of family, inclusiveness afforded a statistically significant edge. Considering those living alone as isolated, the difference was even more prominent ( $\chi^2 = 65.82$ ; df = 2; p < 0.001). Socially well-integrated individuals nurtured suicidal ideas less often (Table 4).

**Table 3. Comparison of family jointness and integration among those with suicidal ideations and controls<sup>@</sup>.**

	Suicidal ideations		Statistical Significance
	Present (N = 150)	Absent (N = 312)	
Family Jointness <sup>#</sup> :			$\chi^2 = 2.66$
Complete and weakly joint.	28	72	
Somewhat joint.	17	44	
Minimal and not joint.	105	196	
Family Integration <sup>##</sup> :			$\chi^2 = 38.51^*$
Good to Moderate integration.	121	299	
Somewhat integrated.	18	10	
No integration to isolation.	11	03	

<sup>@</sup>Only those living with their families were included.

\*p < 0.001

# Family jointness was assessed with Khatri's scale.

##Family integration was quantified with Family Integration Assessment Schedule.

**Table 4. Social Integration of those with suicidal ideation and the controls.**

	Suicidal ideations		Statistical significance
	Present (N = 238)	Absent (N = 365)	
Social Integration#:			$\chi^2 = 25.51^*$
Well integrated	132	268	
Moderately integrated	81	85	
Poorly integrated	15	08	
Not integrated	10	04	

\* $p < 0.001$

# Social Integration was quantified using Social Integration Assessment Schedule.

Psychiatric illness was observed in 53 individuals in the suicidal group and in 15 among the controls. Illness predisposed them significantly towards suicidal thinking ( $\chi^2 = 47.48$ ;  $df = 1$ ;  $p < 0.001$ ). Increasing intensity of suicidal ideas correlated positively with the possibility of psychopathology. All the five members who had made elaborate plans or had attempted suicide were suffering from psychological disturbances.

Suicidal ideas had been recurring for more than one year among 28 (11.8%) individuals, past one year among 106 (44.5%), past month among 71 (29.8%) and past one week among 33 (13.9%). Though 191 (80%) persons experienced such ideas only sporadically, the rest (N = 47. 2%) were disturbed more often.

Subjective unhappiness about life was exhibited by 161 of those with suicidal ideas compared to 80 among the controls ( $\chi^2 = 125.56$ ;  $df = 1$ ,  $p < 0.001$ ). They attributed such thoughts to physical ailments (N = 46; 19.3%), psychosocial disturbances (N = 156; 65.5%) or both (N = 36; 15.2%). Financial dependence (N = 46; 19%), neglect and felt loneliness (N = 89; 37%), illness of family members or bereavement (N = 15; 6%) and interpersonal problems with family members (N = 12; 5%) were experienced as unmanageable and decompensating.

The results indicated that suicidal ideas were recurring over long duration and that many seniors were unhappy about their prevailing psychosocial situation. Yet, except for two patients, others did not pursue with their ideas further. Commitments to certain goals and aims (N = 37; 16%) made it obligatory for them to live despite felt-adversity of the environment. But, compared to the controls, such a binding was not statistically significant ( $\chi^2 = 1.12$ ;  $df = 1$ ; Not significant). All of them nurtured 'suicide counters' which prevented their suicide behaviour (Table 5).

**Table 5. Suicide counters among those with suicidal ideations.**

Suicide counters	Individuals with suicidal ideas#	% (N = 238)
Suicide is a sin.	176	74
No salvation for the soul.	108	46
Social stigma for the family.	79	33
Ceasing of economic support for family.	05	02
Fear of Rebirth.	04	02
Fear of autopsy.	04	02
Fear of wandering as a ghost.	03	01

# Most individuals presented with two or more suicide counters.

### Discussion:

The study was a delicate enquiry of the general population. To discuss 'suicide' with a non-patient can always be a taboo. Care had to be taken that the seniors were not offended and a one to one, empathetic and non-inquisitive approach was ideal. Kliem et al (2017) suggested that routine evaluation during specialized medical care could substantially advance suicide prevention. Though more than half of the elderly who committed suicide had visited specialized health care facilities within four weeks prior to the event, the idea was never revealed. It is an universal experience well substantiated by research that unless directly enquired, the elderly do not reveal their suicidal contemplations (Anand et al, 1983; Szanto, 2002; Ahmedani, 2014). Ono et al (2001) observed that despite recurring thoughts of death or thoughts of suicide, the number of people who consulted family members, professionals, or others was low. Unawareness of the significance of such recurrent thinking, awareness with depressive or social non-communication, somatization, equating such thoughts with 'mental frailty and weakness,' feeling ashamed about the idea and fear

over stigma for self and family were behind such distancing. Clinical psychiatric evaluation, though time-consuming and in need of expertise would be the most suitable answer.

Occurrence of suicidal ideations in various studies differed according to the criteria and definitions used. Barnow and Linden (2000) reported 21.1% of their group had suicidal ideations; Sirey et al (2008) at 13.4%; Almeida et al (2012) at 4.8%; Simon et al (2013) at 2.2 - 16.7% and Kliem et al (2017) at 4.6%. Community surveys in 21 countries conducted by WHO found a 12-month prevalence of suicidal ideation at 2% and a lifetime prevalence of 9%. Among the latter group, 33% planned and 30% attempted suicide. Those who had planned, attempted suicide 4 times more often than those who did not plan. About three fifths of transitions from ideations to planning and from planning to attempt occurred in the first year (Noak et al, 2008; Borges et al, 2010). Higher prevalence (39%) in our study could be due to a broader definition of suicidal ideations, including Life-weariness. Two among our subjects had attempted suicide and three of them were elaborately planning a suicidal act. Missing out the elderly-suicides in the recent past was still a possibility and necessitated consideration. Details of possible old age suicides in the past were enquired into. Data was not reliable and none could be confirmed.

Initiation and sustenance of suicidal ideations over time were related to socio-demographic vulnerabilities and bio-psycho-social correlates. Though individual factors contributed, their interactional outcome was more pathogenic and cumulative rather than summative. Rita Rubin (2017) contended that the trend was more in rural areas in both genders, all age groups and all ethnicities. In the present study, age was not a significant predictor of suicidal ruminations. Though increasing age was accompanied by enhanced possibility of physical limitations and environmental stressors, the contributory factors were extraneous to age (Heisel, 2004). Being a woman was associated with higher rate of ideation (Simon et al, 2013) due to their social and economic susceptibilities. Being widowed or divorced or single enhanced the vulnerability. In the present study, women (N=255) were more often widowed than men (N=45). Kyung-Sook et al (2018) identified marital status as an index of social integration. In their meta-analysis meta-regression study, non married elderly men exhibited a greater risk. Aged women's vulnerability was independent of their marital status. Married individuals, non-married persons and divorcees evinced an increasing order of vulnerability. Among the widowed, grief might overlap depression, but both had different trajectories and different treatment modalities (Ismail et al, 2013). Socio-economic status was inversely related to suicide risk and might be directly or indirectly related through unemployment, mental ill health and social isolation (Naher et al, 2020).

Among the biological factors, age-related physical limitations impaired the quality of life and increased their dependence. Physical ailments aggravate the situation. Illnesses observed in the study included visual impairments, locomotor problems, and respiratory disturbances. Neurological, cardio-vascular, gastro-intestinal, renal, ENT, anemia and gynecological disturbances were seen in less than 5% of the individuals. Most of the problems were treatable but had remained unattended to. Most of them suffered from more than one ailment. Presence of physical ailment was not discriminatory between the groups. Failure to perform basic functions such as housekeeping or preparing meals threatened the independence of a lonely senior (Ismail et al, 2013). But, the handicap was common to both groups. None of the individuals suffered from chronic pain, system failures, oncological problems, significant disabilities or terminal illness.

Presence of psychiatric disturbances weighed significantly in the occurrence of suicidal ideas. In the present study, clinically diagnosable psychopathology consisted of depression, dementia, paraphrenia, anxiety and atypical grief. Depression was the commonest entity. Apart from affective illnesses diagnosis of depression straddled over bereavement, adjustment disorder, depression related to medical illnesses and drug induced depression (Aziz and Steffens, 2013). Psychosis in paraphrenia and lack of judgment in early dementia and atypical resolution of grief could result in suicidal ideations. Sareen et al(2005) observed that a preexisting anxiety disorder was an independent risk factor for subsequent suicidal ideation and attempts. Previous attempt substantially increased overall risk in the future and might be related to an underlying psychiatric disturbance (Tidemalm et al, 2008). But, survivors given follow-up psychiatric appointments had significantly lower likelihood of subsequent suicide (Bostwick et al, 2016). Barnow and Linden (2000) observed that all individuals with suicidal ideations might not fit in with a DSM diagnosis or score significantly in the scales. There was no psychopathology-free suicidality.

Psychological and social dimensions often were not individualistic entities but were multifactorial derivatives. Subjective unhappiness, hopelessness, commitment to achieve life's goals, family non-integration, social exclusion and socio-economic status were most prominent in the background of suicidal ideations. Subjective unhappiness was related more often to psychosocial disturbances. Feeling burdensome, feeling excluded, financial dependence and interpersonal maladjustment were identified as significant causes for their unhappiness. Similarly, social isolation and loneliness, livelihood stressors, irretrievability of the situation and low socio-economic status contributed to unremitting hopelessness and enhanced suicidal thinking (Trivedi et al, 2014; Ribeiro et al, 2018). On the other hand, their 'felt-obligation' to their commitments enabled them to prefer life over death, despite adverse situations and experienced hopelessness. The commitments were essentially for the future of children and grandchildren and looking after family members in need of help. Though in the present study presence of such obligations was not statistically discriminatory, at the individual level they added up as a defense against suicide. They strived to negotiate till death happens naturally in due course and elected not to attempt it by themselves.

In the present study, individuals with suicidal ideations more often did not have a marital partner, had no children and were living alone. Even among those living with the families, psychosocial integration was poor. In the native background, an individual's life-goals, commitment and support system had always been family-centric. Both real loneliness and experienced exclusion resulted in significant psychological damage and left them unsupported at times of need. Disturbed social integration resulted in social exclusion indicating a lack of social network quality. Resultant feelings of thwarted belongingness and perceived burdensomeness were critical to the development of suicidal ideation (Aziz and Steffens, 2013; Endo et al, 2014; Naher et al, 2020). Social cohesion always had an inverse relation to suicidal behavior. Socio-economic status was another significant domain which had an impact on many related variables. Socio-economic status was often related to occupational levels achieved and educational attainments though

none of these variables were applicable to the minimally employed and dependent seniors in our study. Financial strain related to income-poverty threshold ratio was related to suicidal ideations (Pan et al, 2013).

Individuals in the index group had been harboring suicidal ideas for long periods with 56% experiencing them for one year or more. Among one in five, it was a recurrent theme. Physical and psychological disturbances made them vulnerable and the perceived psychosocial support was not conducive. Yet, suicidal ideas had not translated into suicidal behaviour except in two individuals (Nock et al, 2008). Venkoba Rao and Nammalvar (1979) postulated the role of suicide counters in the native resolution of suicidal longings. These culturally congruent health belief systems were entrenched in moralistic, religious, ethical and social obligations of the individuals and shaped their final answer to the ambivalence. Commitment to the family's needs was not a significant factor, reflecting that their role was more of dependence and not of leading. Social stigma, cultural narratives of life and death and religious sanctions on the soul during after-life were staunchly prohibitive.

Multiple factors can have cumulative and interactional elements in an individual's psychopathology of suicidal ideations and attempts. Thus, a widowed senior living alone developed urinary infection. The only son refused to provide him with daily needs including food and was unsupportive financially to meet the medical expenses. Though individual components could have been normally managed, interactional aggravation drove him to suicidal ideations. Pan et al (2013) observed that mental illness was an effect-modifier in understanding the effects of financial strain. Naher et al (2020) studied the effects of socio-economic status and social isolation on suicidal behavior and concluded that these could be the beginning for development of suicide prevention strategies. They suggested that applying longitudinal data and modeling life course interactions of adversities and mental health. Though various studies could identify risk factors and predictability of suicidal behavior (Borges et al, 2010), at an individual level elucidation of psychopathology was specific and sensitive only in the personal context.

### Conclusion:

The first step in resolving a riddle is know it in depth. The apprehension in enquiring about suicidality was whether it would potentiate such tendencies in general and at-risk populations. Dazzi et al (2014) confirmed in the negative that suicidal ideas did not increase subsequently. Acknowledging and talking about suicide might in fact reduce, rather than increase suicidal ideation, and might lead to improvements in mental health. But, clinical psychiatry interview in the delicate area required specialized expertise and could not be left to non mental health professionals. The dilemma was that given the enormity of the problem and the social stigma of attending psychiatry services, mental health professionals might not directly fit in.

The following step-wise approach might help in planning the line of intervention to reach the needy seniors:

Screening by the Village Health Worker: They should be taught about such vulnerabilities as being a widowed woman, living alone unsupported by the family, social exclusion, poor economic status and other indices of caution.

Preliminary assessment by the PHC Medical Officer: They should be trained and sensitized to the sensitivities and modalities of screening interviews. They should identify the presence of physical problems and manage them. When they had an index of suspicion about possible psychopathology. The individual should be referred for further management

Referral to the Psychiatrist. Detailed geropsychiatric assessment including diagnostic formulation, neurological and psychometric assessments and planning of the intervention methods.

Clinical management should consist in managing the physical disturbances along with psychological management. Psychiatric diagnosis would guide pharmacological intervention. Antidepressants, mood stabilizers, antipsychotics, nootropics and supportive measures help in managing the primary illness. Ketamine, intranasal Esketamine and short-term low dosage Buprenorphine have been useful.

The key approach in most patients consisted in psychotherapeutic measures and involving Clinical Psychologists and Psychiatric Social Workers. Acceptance and Regard should define the doctor-patient relation. Resolution of the conflicts at the individual level, involving the 'significant other' in the therapeutic process, family counseling and group therapy constituted various facets of management. Long-term follow-up involving the PHC Medical Officer and Village Health Worker should be a part of the planning.

**Promoting psychological well-being through enhancing perception of meaning in existence should be the final goal.** It is a Nietzschean dictum "he who has a why to live for can bear with almost any how." (Heisel, 2004). In salutation to the senior generation we shall furnish them a meaningful 'why' and provide them with modalities of 'how'.

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