

Spiritual Health and Its Socio-demographic Determinants in Rural Central India: A Community-Based Cross-sectional Study

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Introduction: Spiritual health is considered an important component of overall well-being, yet information from rural Indian communities is limited. Understanding the influence of socio-demographic factors on spiritual health may support holistic approaches in public health. The present study assessed spiritual health inclination in different domains and examined its association with selected socio-demographic variables among rural adults.

Methods: A community-based cross-sectional study was carried out from April to November 2015 at a Rural Demographic Surveillance Site linked to a tertiary care teaching hospital in Central India. The study included 430 individuals aged 15 to 59 years selected through simple random sampling. Data were collected using a pre-tested semi-structured questionnaire assessing three domains of spiritual health. Scores for each domain were grouped into low (0–6), neutral (7–13), and high (14–20) inclination categories. Data analysis was performed using descriptive statistics along with chi-square and Fisher's exact tests.

Results: A large proportion of participants reported high inclination in all three domains of spiritual health. High inclination was most commonly observed for connectedness with self (98.60%), followed by connectedness with a higher authority (78.37%) and search for meaning and purpose in life (76.28%). Significant associations were identified between gender and the domains related to meaning and purpose in life, as well as connectedness with self. Family structure was significantly associated with meaning and purpose in life, whereas educational status showed a significant association with meaning and purpose in life and connectedness with a higher authority ($p < 0.05$). The questionnaire demonstrated moderate internal consistency with a Cronbach's alpha value of 0.69.

Conclusion: The findings suggest that spiritual health inclination is common among rural adults and is associated with factors such as gender, family type, and education. Inclusion of spiritual dimensions in community health approaches may help support more comprehensive public health planning.

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Introduction

Health is traditionally defined as a state of complete physical, mental, and social well-being and not merely the absence of disease. In addition to these established dimensions, spiritual health is increasingly regarded as a fourth dimension of health. Spiritual health refers to the aspect of human existence that seeks meaning, purpose, and fulfillment in life.¹ The concept of spirituality originates from Latin terminology associated with

breath, vitality, and the essence of life.² Spirituality has been described through five major attributes: meaning, values, transcendence, connectedness with self and others, and personal growth or becoming.³ Meaning and purpose in life relate to an individual's sense of value, hope, and reason for existence, often shaped through life experiences and relationships.⁴ Innerness or inner resources represent the process through which individuals develop self-awareness, wholeness, empowerment, and peace within themselves, particularly during periods of stress or uncertainty.⁵ Connectedness refers to a sense of relationship with oneself, other

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individuals, nature, or a higher reality, creating feelings of harmony and belonging.⁶ Transcendence describes the human ability to move beyond ordinary experiences and develop the capacity for healing, adaptation, and wellness.⁴ Over recent decades, spirituality has been increasingly recognized as an important yet frequently overlooked component of patient health and well-being.⁷⁻⁸ A study conducted among Indian saints reported that nearly half of the participants demonstrated good spiritual health grades.⁹ Previous studies have also shown that more than three-fourths of patients prefer spiritual concerns to be considered during medical care, although only a small proportion of physicians address these issues in clinical practice.¹⁰⁻¹¹ Similarly, surveys assessing spiritual needs in healthcare settings found that even non-religious individuals believed that healthcare providers should sensitively explore patients' spiritual concerns. These findings indicate a growing preference for a more holistic approach to healthcare that incorporates spiritual dimensions.¹²

Disturbances in spiritual well-being may result in spiritual distress, which can manifest in several ways. Difficulty in finding meaning or purpose in life may contribute to anxiety, hopelessness, or depressive feelings. Individuals often derive meaning from relationships, achievements, occupations, or financial stability; however, challenges arise when these sources fail or become unattainable, especially during difficult phases of life.¹³ To assess spiritual health, several instruments and conceptual models have been developed, including the four domains model of spiritual health/well-being, the spiritual health and life-orientation measure (SHALOM), the Spiritual Well-Being Questionnaire (SWBQ2) for youth, the "Feeling Good, Living Life" scale for children, and the WHOQOL-SRPB questionnaire developed by the World Health Organization.¹⁴⁻¹⁹ The present study was conducted to assess inclination toward spiritual health among the economically productive rural population. The specific objectives were to evaluate spiritual health across the domains of search for meaning and purpose in life, connectedness with self, and connectedness with a higher authority among adults aged 15 to 59 years in a rural setting, and to examine the association of these domains with selected socio-demographic variables such as age, gender, and educational status. Although spiritual health remains a broad and complex concept without

clearly defined deficiency parameters, the present study attempts to explore its relevance and associated needs within a rural community context.

Methodology

A community-based cross-sectional study was conducted at the Rural Demographic Surveillance Site attached to a tertiary care teaching hospital in Madhya Pradesh from April 2015 to November 2015. The study population included males and females aged 15 to 59 years. Migratory populations, individuals who were seriously ill during data collection, and those receiving prolonged psychiatric treatment were excluded to avoid discomfort during interviews and to ensure reliable responses.

Data were collected using a pre-tested semi-structured questionnaire prepared after review of relevant literature. Spiritual health was assessed under three domains: search for meaning and purpose in life, connectedness with self, and connectedness with a higher authority. Each domain had a score range of 0–20. Scores were categorized as low inclination (0–6), neutral response (7–13), and high inclination (14–20). These categories were created by proportionally dividing the total score range for ease of interpretation and were not based on empirical population cut-offs.

Sample size was calculated using the formula $N = Z_{1-\alpha/2}^2 \times PQ / L^2$. In the absence of prior prevalence estimates, a prevalence of 50% was assumed to obtain the maximum sample size, with a 5% margin of error and 95% confidence interval. After adding 10% for possible non-response, the final sample size was rounded to 430. Participants were selected by simple random sampling using the population records available at the surveillance site.

Statistical Analysis

Although the domain scores were continuous variables, they were grouped into categories to simplify interpretation in the community setting. Descriptive statistics, including mean, standard deviation, and variance, were calculated. Associations between variables were assessed using the chi-square test and Fisher's exact test wherever applicable.

Ethical Consideration

Written informed consent was obtained from all participants before data collection. For participants below 18 years of age, parental consent and informed assent were obtained. Interviews were conducted using the direct interview method. Ethical approval was obtained

Table 1: Socio-demographic profile of study participants

Variable	Category	Frequency n (%)
Age (years)	15–20	70 (16.28)
	21–29	92 (21.39)
	30–39	118 (27.44)
	40–49	78 (18.14)
	50–59	72 (16.74)
Gender	Male	346 (80.47)
	Female	84 (19.53)
Marital status	Not applicable (minor)	12 (2.79)
	Married	339 (78.84)
	Unmarried	65 (15.12)
	Widow	11 (2.56)
	Divorcee	1 (0.23)
	Separated	2 (0.47)
Educational status	Illiterate	104 (24.19)
	Primary	108 (25.35)
	Middle school	81 (18.84)
	High school	53 (12.32)
	Higher secondary	44 (10.23)
	Graduate	25 (5.81)
	Post-graduate or above	15 (3.49)
Occupation	Unemployed	19 (4.42)
	Farmer	231 (53.72)
	Labourer	105 (24.42)
	Job	21 (4.88)
	Others	54 (12.56)
Type of family	Nuclear	143 (33.26)
	Three-generation	18 (4.19)
	Joint	269 (62.56)
	Class-I	1 (0.23%)
	Class-II	7 (1.63%)
	Class- III	7 (1.63%)
	Class-IV	64 (14.88%)
	Class-V	351 (81.63%)

from the Institutional Ethics Committee before initiation of the study (IEC Ref No. 370).

Reliability Testing

Internal consistency of the questionnaire was assessed using Cronbach's alpha. The overall Cronbach's alpha value was 0.69, indicating moderate internal consistency of the tool.^{20,21}

Results

Table 1 depicts the socio-demographic profile of the study participants. The majority belonged to the economically productive age group of 30–39 years (27.44%), with a male predominance (80.47%). Most participants were married (78.84%), literate (75.81%), and engaged in farming (53.72%), while unemployment was low (4.42%). A large proportion belonged to lower socio-economic status (Class V: 81.63%) and lived in joint families (62.56%).

Table 2 presents the mean scores, standard deviations, and variances of the responses provided by study participants to the questions in each domain.

Table 3 distribution of spiritual health domains according to score categories among study participants (n = 430)

A high inclination was observed in the majority of participants across all domains, particularly for search for meaning and purpose of life (76.28%) and connectedness with self (98.60%). connectedness with higher authority also showed predominantly high inclination (78.37%), with no participants in the low-inclination category. Overall, most participants demonstrated a high level of spiritual health across all assessed domains.

Table 4 analysis of gender-based differences, statistical associations within certain spiritual health domains; however, these findings must be interpreted with caution due to notable differences in response distributions. For the domain search for meaning and purpose of life, a statistically significant association with gender was observed ($p < 0.05$). A higher proportion of males (83.82%) demonstrated a high inclination compared to females (45.24%), while female participants more frequently exhibited a neutral/moderate response.

Similarly, in the domain of connectedness with self, males (83.24%) showed a higher inclination than females (58.33%). Across all domains, neutral responses were consistently more prevalent among female participants than males. Conversely, no statistical association was observed between gender and the domain connectedness with higher authority.

The distinct skew in response patterns, specifically the higher concentration of neutral responses among females, may reflect differences in reporting styles or sample characteristics rather than a definitive difference in spiritual health.

The relatively smaller number of female participants (n = 84) may have limited the statistical power to detect gender-based differences and restricted the generalizability of gender-related findings.

Table 2: Questions in each domain and the mean scores obtained by the participants (n = 430)

<i>Spiritual health domain</i>	<i>Questions in each domain (scores 0-4)</i>	<i>Mean</i>	<i>SD</i>	<i>Variance</i>
Search for meaning and purpose of life	1. How comfortable are you living peacefully and enjoying yourself alone?	3.02	1.25	1.57
	2. How happy are you with yourself?	3.18	1.15	1.32
	3. To what extent does helping and caring for others make your life meaningful?	3.75	0.68	0.47
	4. To what extent do you find your life meaningful?	3.07	1.23	1.51
	5. To what extent do your own thoughts/beliefs help you understand the difficulties of life?	3.32	0.88	0.78
Connectedness with self	1. How much do you worry about any shortcomings in carrying out your daily activities?	3.84	0.53	0.28
	2. How lonely do you feel in your life?	3.86	0.50	0.25
	3. Do you feel you are living in a safe and secure environment?	3.92	0.38	0.15
	4. How much do you like where you live?	3.86	0.50	0.26
	5. How much fun do you have in your free time?	4.00	2.64	6.99
Connectedness with higher authority	1. To what extent does your relationship with God/Allah/Bhagwan help you overcome difficult times?	2.21	0.76	0.57
	2. How much does your faith help you with your well-being?	2.28	0.71	0.51
	3. How optimistic are you about your life?	3.47	0.83	0.68
	4. To what extent do you feel a connection/relationship between your body, mind and spirit?	3.63	0.66	0.43
	5. Do you believe that whatever is happening is happening for good as per God's will?	3.32	0.62	0.39

Table 3: presents the distribution of participants according to scores for the three spiritual health domains

<i>Spiritual health domain</i>	<i>Low inclination (0-6) n (%)</i>	<i>Neutral response (7-13) n (%)</i>	<i>High inclination (14-20) n (%)</i>	<i>Total (n)</i>	<i>Mean score</i>	<i>Standard deviation</i>
Search for meaning and purpose of life	7 (1.62)	95 (22.09)	328 (76.28)	430	16.23	3.90
Connectedness with self	2 (0.47)	4 (0.93)	424 (98.60)	430	14.80	2.60
Connectedness with higher authority	0 (0.0)	93 (21.63)	337 (78.37)	430	19.34	3.60

Table 4: Association of gender with inclination toward spiritual health (n = 430)

Search for meaning and purpose of life						
	<i>Low inclination</i>	<i>Neutral response</i>	<i>High inclination</i>	<i>Total</i>	<i>Chi-square test value</i>	<i>p-value</i>
Male	3 (0.86%)	53 (15.32%)	290 (83.82%)	346	56.29	0.000*
Female	4 (4.76%)	42 (50%)	38 (45.24%)	84		
Connectedness with higher authority						
Male	1 (0.29%)	4 (1.16%)	341 (98.55%)	346	1.93	0.38
Female	1 (1.19%)	2 (2.38%)	81 (96.43%)	84		
Connectedness with self						
Male	0 (0%)	58 (16.76%)	288 (83.24%)	346	22.09	0.000*
Female	0 (0%)	35 (41.67%)	49 (58.33%)	84		

Values are expressed as number (percentage).

**p-value* < 0.05 was considered statistically significant.

Table 5: Association of type of family with inclination toward spiritual health domains (n = 430)

<i>Spiritual health domain</i>	<i>Type of family</i>	<i>Low inclination n (%)</i>	<i>Neutral response n (%)</i>	<i>High inclination n (%)</i>	<i>Total (n)</i>	<i>Fisher's exact test</i>	<i>p-value</i>
Search for meaning and purpose of life	Nuclear	5 (3.50)	39 (27.27)	99 (69.23)	143	9.38†	0.05*
	Three-generation	0 (0.0)	5 (27.78)	13 (72.22)	18		
	Joint	2 (0.74)	51 (18.95)	216 (80.30)	269		
Connectedness with higher authority	Nuclear	0 (0.0)	5 (3.50)	138 (96.50)	143	8.053†	0.09
	Three-generation	0 (0.0)	0 (0.0)	18 (100.0)	18		
	Joint	2 (0.74)	1 (0.37)	266 (98.88)	269		
Connectedness with self	Nuclear	0 (0.0)	39 (27.27)	104 (72.73)	143	4.08†	0.13
	Three-generation	0 (0.0)	3 (16.67)	15 (83.33)	18		
	Joint	0 (0.0)	51 (18.96)	218 (81.04)	269		

Table 5 shows a statistically significant association between the type of family and the spiritual health domain, search for meaning and purpose of life. Participants from joint families demonstrated the highest proportion of high inclination (80.30%), compared to nuclear (69.23%) and third-generation families (72.22%). Overall, joint family structure was associated with a greater inclination toward meaning and purpose in life. No statistically significant association was observed between family type and the other subcomponents, connectedness with self and connectedness with higher authority.

Table 6 demonstrates a statistically significant association between education level and the spiritual health subcomponent search for meaning and purpose of life, with the highest proportion of high inclination observed among participants educated up to graduation or above (97.50%). A significant association was also noted between education level and connectedness with higher authority, with higher inclination predominating across all education categories, particularly among those with primary/middle level schooling. No statistically significant association was found between education level and the subcomponent connectedness with self. Other socio-demographic variables, including age, marital status, and socio-economic class, did not show significant associations with spiritual health domains.

Discussion

In the present study, the majority of participants were males (81%), while females constituted 19% of the study population. This imbalance was mainly due to the non-participation of several female respondents who were either unwilling to discuss spirituality-related questions or required longer interview times during data collection.

Most participants were married (79%), whereas only a small proportion were divorced or separated, which is comparable with findings from the district-level household survey. Literacy was observed among nearly three-fourths of participants, while about one-fourth were illiterate, similar to the Census 2011 profile of the district.²²

Farming was the most common occupation among participants (54%), while unemployment was reported in only 4% of the study population. According to the Second Annual Employment and Unemployment Survey (2013–14), the unemployment rate among individuals aged 15 years and above was around 2%.²³ The slightly higher proportion observed in the present study may be related to the inclusion of only the economically productive age group. Most participants belonged to the lower socio-economic category, with a large majority classified under Class V according to the modified B.G. Prasad classification. Joint family systems were more common than nuclear families in the study area.²⁴

Spiritual health was studied under the domains of search for meaning and purpose in life, connectedness with self, and connectedness with a higher authority. In the domain related to meaning and purpose in life, more than three-fourths of participants showed a high inclination. Burkhardt *et al.* described spirituality in rural communities as closely linked with relationships, daily experiences, and inner strength.²⁵ The high level of inclination observed in the present study may reflect the strong influence of spirituality and religious beliefs within rural Indian communities. The concepts proposed by Tillich²⁶ and Viktor Frankl⁴ also support the importance of meaning-seeking as an important aspect of human life, particularly during uncertainty and stress. A very high proportion of participants demonstrated a

Table 6: Association of Level of education with inclination toward various spiritual health domains (n=430)

Spiritual health domain	Education level	Low inclination n (%)	Neutral Response n (%)	High inclination n (%)	Total (n)	Fisher's exact test	p-value
Search for meaning and purpose of life	Illiterate	6 (5.77)	34 (32.69)	64 (61.54)	104	33.78†	0.008*
	Primary/Middle	0 (0.00)	43 (22.75)	146 (77.25)	189		
	High school/Higher secondary	1 (1.03)	17 (17.53)	79 (81.44)	97		
	Graduate and above	0 (0.0)	1 (2.50)	39 (97.50)	40		
Connectedness with higher authority	Illiterate	0 (0.0)	4 (3.85)	100 (96.15)	104	13.48†	0.04*
	Primary/Middle	0 (0.0)	2 (1.06)	187 (98.94)	189		
	High school/Higher secondary	2 (2.06)	0 (0.0)	95 (97.94)	97		
	Graduate and above	0 (0.0)	0 (0.0)	40 (100.0)	40		
Connectedness with self	Illiterate	0 (0.0)	28 (26.92)	76 (73.08)	104	4.97†	0.174
	Primary/middle	0 (0.0)	41 (21.69)	148 (78.31)	189		
	High school/ Higher secondary	0 (0.0)	20 (20.62)	77 (79.38)	97		
	Graduate and above	0 (0.0)	4 (10.00)	36 (90.00)	40		

Figures in the parenthesis indicates the percentage of row total

*p-value < 0.05 considered statistically significant.

† Fisher exact test value

high inclination in the domain of connectedness with self. Fisher *et al.* suggested that the personal domain forms the foundation of spiritual health because individuals first develop awareness and understanding of themselves before establishing wider connections.¹⁶ In rural settings, spirituality is often closely associated with daily living practices, cultural beliefs, and coping behaviors, which may explain the high scores observed in this domain.²⁷ However, the very high proportion of participants in the high-inclination category may also suggest a ceiling effect, indicating that the tool may have had limited ability to distinguish subtle differences in spiritual health levels.¹⁶ Responses may additionally have been influenced by social desirability bias, where participants provide culturally acceptable responses, and by acquiescence bias seen in self-reported questionnaires. Therefore, these findings should be interpreted carefully, and future studies may benefit from using more sensitive assessment tools or mixed-method approaches.²⁸ For the domain of connectedness with a higher authority, most participants reported a high inclination and none of the participants fell into the low-inclination category. This finding may be related to the strong religious and spiritual orientation commonly present in rural populations, where belief in a higher authority is deeply rooted in everyday life.²⁸

Similar observations were reported by Mishra *et al.* (2019), who reported good spiritual health grades among Indian saints. However, direct comparison should be made cautiously because saints represent a population that is naturally more spiritually inclined than the general rural population.⁹ Gender-based analysis showed a significant association between gender and the domains search for meaning and purpose in life and connectedness with self. Male participants more frequently demonstrated high inclination, whereas females more commonly reported neutral responses. No significant association was observed between gender and connectedness with a higher authority. Similar findings were reported by Raghavendra *et al.*, who observed higher spiritual health scores among males.²⁹ In contrast, Hammermeister *et al.* reported higher scores among females, suggesting that spiritual health patterns may vary across different populations and cultural settings.³⁰ Since female participants were fewer in number, these findings should be interpreted with caution and may not be fully generalizable.

Family structure showed a significant association with the domain of search for meaning and purpose in life. Participants belonging to joint families demonstrated a greater inclination in this domain compared to those

from nuclear families. Similar findings were observed in the study conducted by Mishra B. *et al.*, where joint family structure influenced spirituality-related outcomes.³¹ No significant association was found between family type and the remaining spiritual health domains.

Educational status showed a significant association with the domains search for meaning and purpose in life and connectedness with a higher authority. Participants with higher educational attainment demonstrated greater inclination toward spiritual health. No significant association was observed between education level and connectedness with self. Similar observations were reported by Raghuvver *et al.* among medical students, where parental education showed an association with spiritual health.³² However, limited evidence is available regarding the relationship between education and spiritual health in rural populations, and therefore, the present findings may contribute useful information in this area.

Conclusion

Spiritual health inclination was high among rural adults, especially for meaning and purpose in life and connectedness with self. Gender, family type, and education showed significant associations with selected spiritual health domains. Joint family structure and higher education were linked with stronger spiritual inclination, while females more often reported neutral responses. Integrating spiritual health into community health assessments may improve holistic public health planning.

Strength

A major strength of the study was the use of community-based random sampling, which improved the representativeness of the rural population. In addition, spiritual health was assessed across multiple domains using a structured pre-tested questionnaire, allowing domain-specific analysis.

Limitations

The cross-sectional design limits causal interpretation between socio-demographic factors and spiritual health domains. The moderate internal consistency of the self-designed questionnaire may have affected measurement reliability. Female participants were underrepresented, which may limit the generalizability of gender-based findings. In addition, the study was not specifically powered for subgroup analyses, and reliance on categorical analysis may have reduced the ability to identify dose-response relationships.

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Author Contributions

First Author (Vibha Arjaria) - conceived and designed the study, conducted data collection, performed data entry and statistical analysis, and drafted the initial manuscript. Second Author (Dr. Badrinarayan Mishra) conceived and designed the study provided intellectual guidance on study methodology, supervised data analysis, critically reviewed the manuscript for important scientific content, and contributed to interpretation of results. Both authors read and approved the final manuscript and agree to be accountable for all aspects of the work, ensuring accuracy and integrity of the data presented. Guarantor- First Author is the Guarantor for the present manuscript.

Declaration Statement

All authors have read and approved the final version of the manuscript and meet the criteria for authorship as stated in this document. Each author confirms that the work presented is original, has been conducted with integrity, and accurately represents the research performed. The authors collectively take responsibility for the content of the manuscript.

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