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Research Article

Prevalence and Associated Factors of Symptoms of Depression, Anxiety, Stress and Coping Strategies among Adults in a Rural Community in Southern Province, Sri Lanka

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Abstract

Background and objective: Negative emotional status due to various life challenges have been reported very often among adult population. These problems increase the risk of developing mental health problems and accelerate their progression in communities. The objective of the study was to determine the prevalence and associated factors of symptoms of depression, anxiety, stress, self-reported reasons for psychological distress and coping strategies among adults in Nagoda Divisional Secretariat area, Galle, Sri Lanka.

Method: A descriptive cross-sectional study was conducted with the participation of 280 adults aged 20-64 years, selected using cluster sampling from randomly selected five Grama Niladari divisions in Nagoda Divisional Secretariat area. Previously validated Depression, Anxiety, Stress Scale-21(DASS-21) was administered to assess the symptoms of depression, anxiety and stress. Descriptive analysis and chi-square test were performed using SPSS software (Version 23).

Results: Of the participants, 59.3% were females. Around 40% were aged 35-50 years. The prevalence of symptoms of depression, anxiety and stress were identified as 33.2%, 18.6% and 59.6% respectively. Prevalence of symptoms of depression (37.9%) and anxiety (21.7%) were higher among females. Stress was more prevalent (52.6%) in males. Gender (p=0.042) and living arrangement (p=0.025) showed a significant association with depression. Presence of a comorbidity (p=0.040) showed a significant association with stress. The reasons for psychological distress perceived by participants were; health issues of family members (53.6%), own health problems (52.1%), relationship issues (44.3%) and dietary pattern associated issues (44%). A few participants reported meditation (15.4%), engaging in exercises (14.6%), seeking counselling support (13.9%) and recreational activities (14.3%) as their healthy coping strategies.

Conclusions: This study showed a high prevalence of symptoms of stress compared to depression and anxiety among adults and major determinants of emotional symptoms were personal and family health issues. Only few individuals were practicing healthy coping strategies. The results emphasize the importance of improving adult health at community level that may contribute to positive mental health.

Keywords: *depression, anxiety, stress, adults, coping strategies*

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Introduction

Mental health is defined as a state of mental well-being enabling people to "cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community" (WHO, 2022 a). It is evident that one in every eight people live with a mental disorder, characterized by a clinically significant disturbances in thinking, emotional regulation or behavior, usually associated with impairment in important areas of functioning (WHO, 2022 b).

Psychological status is closely related to the physical and social functioning, which ultimately contributes to overall health outcomes of the individuals (Doan et al., 2022). Various socioeconomic factors contribute to poor mental health which ultimately lead to mental health problems (WHO, 2013). The above issues need to be addressed to bring about awareness and prevention of mental health problems by implementing comprehensive preventive strategies (WHO, 2013).

Mental health is determined by individual factors such as emotions, behaviors, the ability for the management of thoughts, and interaction with others (WHO, 2022 a). Other social, cultural, economic, political and environmental factors such as national policies, social protection, standards of living, working conditions, and community support are the determinants of mental health of an individual (WHO, 2022 a).

Among many different types of mental health issues, depression, anxiety and stress are common negative emotional status among the adult population (Amu et al., 2021). Depressive symptoms are more prevalent among females (5.1%) than males (3.6%) (WHO, 2017). Depression is characterized by short-term emotional responses associated with impaired daily functioning with symptoms including sadness and frustration, feelings of guilt, insensibility and loss of interest (Mirzaei et al., 2019).

The proportion of the global population with anxiety disorders is 301 million (WHO, 2022 b). Anxiety disorders that begin during childhood, adolescence, and early adulthood may persist as chronic conditions at a later stage of their lives (Craske & Stein, 2016).

Stress has been defined as a process in which environmental demands exceed the adaptive capacity of an organism, leading to psychological and biological changes that direct persons at risk for disease (Cohen et al., 1995). Symptoms of stress obstruct an individual's well-being and results in the way that individuals interact with the environment based on their own values Stress has a complex interrelation with individual psychological factors, psychosocial factors and environmental factors (Bergdahl & Bergdahl, 2002). Psychological distress is caused by many factors such as life stressors, death of a loved one, chronic illnesses of self and family members, loss of occupation, relationship issues and traumatic events (Mental Health Foundation, 2021). Coping strategies are the practical skills which help people to cope with stress and support mental wellbeing (WHO, 2020).

Although South Asian countries including Sri Lanka have a huge burden of mental health problems due to negative emotional status, the problem has not been addressed properly because of various barriers, predominantly the stigma and lack of awareness of the people regarding mental health issues (Trivedi et al., 2007). With regard to prevalence of symptoms of depression, anxiety and stress among adults, there is a scarcity of epidemiological data from rural areas of Sri Lanka. Further, there are no published studies carried out in the Southern province to assess the symptom prevalence and associated factors of anxiety, depression and stress among general adult population. Therefore, the findings of this study would be beneficial to identify those problems in the current context. With this background, the current study was conducted to determine the prevalence of symptoms of depression, anxiety, stress, associated factors and coping strategies among adults in Nagoda Divisional Secretariat area, Galle, Sri Lanka.

Methods

Design and setting

This cross-sectional household survey was conducted, from September 2019 to February 2020 with the participation of 280 community-dwelling adults residing in Nagoda Divisional Secretariat (DS) area, Galle, Sri Lanka. Adults included were in the age range of 20 to 64 years (Ritchie & Roser, 2019).

Sample and sampling

The sample size calculation was done using Daniel (1999) formula, based on a study conducted to assess the prevalence of depression, anxiety, and stress among young male adults in India which reported 24.4% (P) prevalence of symptoms of anxiety (Sahoo & Khess, 2010). Absolute precision (d) was considered as 0.05. Sample size was 280. Inclusion criteria for the study were, permanent residents of the Nagoda DS area aged between 20-64 years who gave informed consent. Those who are critically ill, diagnosed with a psychiatric disease and physically dependent were excluded.

Two stage cluster sampling method was used. Firstly five Grama Niladhari (GN) divisions were randomly selected out of 53 GN divisions under the Nagoda Divisional Secretariat (Ministry of Home Affairs, 2022) using lottery draw method. Secondly 56 participants were randomly selected from each GN division using the electoral register. Cluster effect was considered as one, assuming that the socio demographic characteristics are the same among the residents in all GN divisions.

Home visits were done in each selected GN division starting from a randomly selected house and visits were done according to feasibility of reaching. When there were several individuals who fulfilled the inclusion criteria at the same house, one of them who volunteered was interviewed. Interviews were conducted until completion of 56 participants from each GN division.

Study instrument

An interviewer administered, structured questionnaire was used to collect the data. The questionnaire consisted of three sections. Section A and C (having part I and II) were self-developed by the investigators. Section A consisted of 18 questions on socio demographic data, personal characteristics and their comorbidities. Part I of the section C consisted of 10 statements on reasons for psychological distress and part II consisted of 12 statements on coping strategies. Section B consisted of validated Sinhala version of Depression, Anxiety, Stress scale-21 (DASS 21). It was a 21 item self-reported questionnaire, originally developed by Lovibond & Lovibond (1995) designed to measure the severity of a range of symptoms common to depression, anxiety and stress. It has been validated among Sinhala speaking students in the University of Colombo (Aththidiye, 2012). Internal consistency of depression, anxiety, stress subscales were reported as 0.83, 0.76, and 0.8 respectively (Aththidiye, 2012). The DASS-21 scale has three subscales, indicated by the letters D (Depression), A (Anxiety) and S (Stress). All subscales were rated on a four-point Likert scale ranging from 0 (Never) to 3 (Almost always).

Section A and C were pretested using 10 adult residents from Gonadeniya GN area and six questions in section A were modified based on their feedbacks.

Data collection

Written permission from the Divisional Secretariat, Nagoda, was obtained and the GNs of each selected area were met prior to data collection. Data collection was conducted at participants' residences. The individuals who met the inclusion criteria were provided with a clear explanation of the study using a written information sheet and written informed consent was obtained from each participant prior to administration of the questionnaire. A convenient time for the participants without disturbing their day-to-day activities was selected and adequate time was given for responding to the questions.

Data analysis

Analysis of data obtained from DASS-21 was performed adhering to DASS analysis guidelines (Lovibond & Lovibond, 1995). Because DASS 21 is a short form version of the DASS (the Long Form has 42 items), the final score of each item groups (Depression, Anxiety and Stress) was multiplied by two (x2) to obtain the final score. Cut-off scores of >9, >7, and > 14 represented a positive screen of symptoms of depression, anxiety, and stress, respectively. The scores for identifying the symptoms of depression were categorized as follows: mild (10–13), moderate (14–20), severe (21–27), extremely severe (28–42). The criteria for anxiety were categorized as follows: mild (8–9), moderate (10–14), severe (15–19), extremely severe (28–42). The subscale score for stress was assessed as follows:

mild (15–18), moderate (19–25), severe (26–33), extremely severe (34–42) (Lovibond & Lovibond, 1995).

Data were entered into the SPSS version 23.0 software and analyzed using descriptive and inferential statistics. As dataset was normally distributed, Pearson's chi-square test/ Fisher's exact test was used to assess the associations between categorical variables. In this analysis, those who are having any level of symptoms (mild, moderate, severe, extremely severe) of depression, anxiety and stress were taken as one variable and normal individuals were taken as the other variable. Statistical significance was set at $p < 0.05$.

Ethical considerations

Ethical approval for the study was obtained from the Ethics Review Committee of Faculty of Medicine, University of Colombo, Sri Lanka (Ref No: PGDHD/17/09). Confidentiality and anonymity of each participant was ensured. Only the investigators had access to the data.

Results

Demographic characteristics of the study sample

Demographic characteristics of the participants are presented in Table 1. A total of 280 adults participated in the study. The mean age was 41.92 (SD=13.05) years. The majority (59.3%) of the participants were females and 39.6% of the study sample were in the age group of 35-50 years. Most (70 %) of the participants were married (Table 1).

Table 1: Frequency distribution of demographic characteristics and the psychological status of the study sample (N=280)

Demographic characteristic		Frequency (%)
Gender	Male	114 (40.7)
	Female	166 (59.3)
Age group	20-34 years	87 (31.1)
	35-50 years	111 (39.6)
	51-64 years	82 (29.3)
Marital status	Married	196 (70.0)
	Single/ Other	84 (30.0)
Level of education	Grade 5 and below	50 (17.9)
	Grade 6 to G.C.E (O/L)*	88 (31.4)
	Up to G.C.E (A/L)#	101 (36.1)
	Diploma/ Degree	41 (14.6)
Employment status	Employed	151 (53.5)
	Not employed	129 (46.1)
Monthly income (LKR)	<10000	121(43.2)
	10000- 20000	141 (50.4)
	21000- 50000	18 (6.4)
	51000- above	0 (0.0)
Psychological status		
Depression	Normal	187 (66.8)
	Mild	86 (30.7)
	Moderate	7 (2.5)
Anxiety	Normal	228 (81.4)
	Mild	44 (15.7)
	Moderate	8 (2.9)
Stress	Normal	141 (50.4)
	Mild	90 (32.1)
	Moderate	47 (16.8)
	Severe/extremely severe	2 (0.7)

*General Certificate of Education (Ordinary Level)
#General Certificate of Education (Advanced Level)

Prevalence of symptoms of depression, anxiety and stress

Based on the scores, 30.7% had symptoms of mild depression while 2.5% had moderate depressive symptoms. A few participants had mild (15.7%) and moderate (2.9%) symptoms of anxiety respectively. Nearly one-third had symptoms of mild stress (32.1%) A few had moderate (16.8%) and severe symptoms of stress (0.7%). Related to depression and anxiety, there were no participants with severe or extremely severe symptoms (Table 1).

Factors associated with levels of depression, anxiety and stress among participants

In the study sample, the prevalence of depressive symptoms was significantly higher in women (37.9%) than in men (26.4%). Of the participants, those who are between 20-44 years showed a higher prevalence of symptoms of depression (36.3%) compared to those who are between 45-64 years. The chi-square test results revealed that there were statistically significant associations with the presence of symptoms of any level of depression with gender (p=0.042) and living arrangement (p=0.025). Twenty one point seven percent of female participants showed anxiety related symptoms which are higher than the prevalence of symptoms of anxiety among males (14.0%). Of the married participants, 19.9% did not show any level of anxiety related symptoms. None of the demographic factors that were considered in the study showed any statistically significant associations with the presence of any level of anxiety symptoms. The prevalence of stress related symptoms among males and females was 52.6% and 47.6% respectively. Almost half of the individuals of the age group of 20-44 years (50.7%) and 45-64 years (48.3%) showed symptoms of stress while nearly half (52.6%) of the married women showed symptoms of stress. There were no statistically significant associations of stress with any of the demographic characteristics (Table 2).

Prevalence of symptoms of depression, anxiety, stress and comorbidities

Individuals with comorbidities such as hypertension (47%), diabetes mellitus (46.2%), heart diseases (42.9%), respiratory diseases (47.1%) and renal diseases (55.6%) showed a higher prevalence of stress than anxiety and depression (Figure 1). Results of the chi-square test showed that there were statistically significant associations of the prevalence of anxiety with hypertension (p=0.047) and stress with the presence of any type of comorbidity (p=0.040). However, prevalence of depression symptoms did not show a significant association with any type of comorbidity.

Self-reported reasons for psychological distress

The most prevalent reported reasons for psychological distress among participants were income (73.6%), personal future plans (64.6%), busy work schedule (70.4%) and personal appearance (71.4%). Around half of the participants perceived health status of the family members (53.6%), own health status (52.1%), relationship issues (44.3%) and dietary pattern (44.6%) as the reasons for psychological distress.

Table 2: Factors associated with symptoms of stress, depression and anxiety among participants (N=280)

Demographic characteristic		**Level of stress**		**P-value**
		Normal n (%)	Presence of symptoms of stress n (%)	
Gender	Male	54 (47.4)	60 (38.6)	0.407*
	Female	87 (52.4)	79 (47.6)	
Age (in years)	20- 44	79 (49.4)	81(50.6)	0.704*
	45- 64	62 (51.7)	58 (48.3)	
Marital status	Married	93 (47.4)	103 (52.6)	0.137*
	Single	48 (57.1)	36 (42.9)	
Level of education	Grade 5 and below	23 (46.0)	27 (54.0)	0.299*
	Grade 6 to GCE(O/L)	40 (45.5)	48 (54.5)	
	GCE(A/L) and above	78 (54.9)	64 (45.1)	
Employment status	Employed	75 (49.7)	76 (50.4)	0.803*
	Unemployed	66 (51.2)	63 (48.8)	
Monthly income (LKR)	<10000	60 (49.6)	61 50.5)	0.641*
	10000- 20000	70 (49.6)	71 (50.4)	
	21000- 50000	11 (61.1)	7 (38.9)	
Living arrangement	Living with another person	123 (49.0)	128 (51.0)	0.183*
	Living alone	18 (62.1)	11 (37.9)	

Demographic characteristic		**Level of depression**		**p- value**
		Normal n (%)	Presence of symptoms of depression n (%)	
Gender	Male	84 (73.7)	30 (26.3)	0.042*
	Female	103 (62.0)	63 (38.0)	
Age (in years)	20- 44	102 (63.7)	58 (36.3)	0.213*
	45- 64	85 (70.8)	35 (29.2)	
Marital status	Married	134 (68.4)	62 (31.6)	0.391*
	Single/Other	53 (63.1)	31 (36.9)	
Level of education	Grade 5 and below	20 (40.0)	30 (60.0)	0.067*
	Grade 6 to GCE(O/L)	53 (60.2)	35 (39.8)	
	GCE(A/L) and above	104 (18.9)	38 (12.5)	
Employment status	Employed	100 (66.2)	51 (33.8)	0.829*
	Unemployed	87 (67.4)	42(32.6)	
Monthly income (LKR)	<10000	81 (66.9)	40 (33.1)	0.296#
	10000- 20000	91 (64.5)	50 (35.5)	
	21000- 50000	15 (83.3)	3 (16.7)	
Living arrangement	Living with another person	173 (68.9)	78 (31.1)	0.025*
	Living alone	14 (48.3)	15 (51.7)	

*Pearson's Chi-square test, # Fisher's exact test

GCE(O/L)=General Certificate of Education(Ordinary Level), GCE(A/L)= General Certificate of Education(Advanced Level)

Demographic characteristic		**Level of anxiety**		**p-value**
		Normal n (%)	Presence of symptoms of anxiety n (%)	
Gender	Male	98 (86.0)	16 (14)	0.106*
	Female	130 (78.3)	36 (21.7)	
Age (in years)	20- 44	127 (79.4)	33 (20.6)	0.308*
	45- 64	101 (84.2)	17 (14.2)	
Marital status	Married	157 (80.1)	39 (19.9)	0.383*
	Single/Other	71 (84.5)	13 (15.5)	
Level of education	Grade 5 and below	42 (84.0)	8 (16.0)	0.606*
	Grade 6 to O/L	69 (78.4)	19 (21.6)	
	A/L and above	117 (82.4)	25 (17.6)	
Employment status	Employed	123 (81.5)	28 (18.5)	0.989*
	Unemployed	105 (81.4)	24 (18.6)	
Monthly income (LKR)	<10000	103 (85.1)	18 (14.9)	0.355#
	10000- 20000	111 (78.7)	30 (21.3)	
	21000- 50000	14 (77.8)	4 (22.2)	
Living arrangement	Living with another person	201 (80.1)	50 (19.9)	0.127#
	Living alone	27 (93.1)	2 (6.9)	

*Pearson's Chi-square test, # Fisher's exact test
GCE(O/L)=General Certificate of Education(Ordinary Level), GCE(A/L)= General Certificate of Education(Advanced Level)

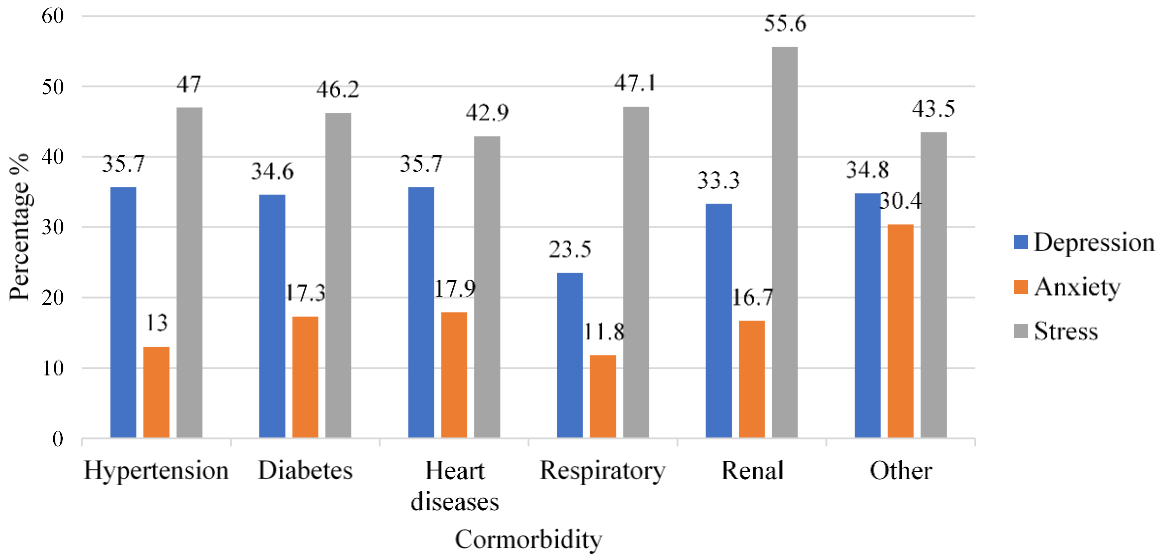

Figure 1: Prevalence of symptoms of depression, anxiety, stress and comorbidities

Coping strategies used by the participants

Three fourths of the participants (75.7%) reported that they watch television or listen to radio/ music as a coping strategy for stress. However, a very low percentage of the participants reported that they practice healthy coping strategies such as meditation

(15.4%), exercises (14.6%), seek counselling support (13.9%) and recreational activities (14.3%) respectively. Although more women practiced different coping strategies than men, practices of using alcohol (23.2%) and smoking (11.8%) as stress coping methods were reported only by males (Table 3).

Discussion

Prevalence and associated factors of symptoms of depression, anxiety and stress

The reported prevalence of symptoms of depression among adult individuals in this study (33.2%) was higher than that of the global prevalence of depression in the general population, reported as 4.4% (WHO, 2017). Further, it is higher than the reported prevalence of depression (22.9%) among University staff in Ethiopia (Yeshaw & Mossie, 2017) and of a study among general population in Korea which reported 6.7% as the prevalence of depression (Shin et al., 2017). These differences may be due to sociocultural variations across different populations. Results of the current study regarding the statistically significant associations of the presence of symptoms of depression were contradictory to a study conducted in Iran among the adult population (Mirzaei et al., 2019) which showed statistically significant association of level of depression with age, marital status, level of education, and employment status. Although there was no statistically significant association between the symptoms of depression and gender, a higher prevalence of depressive symptoms was reported among females in the current study.

The prevalence of the symptoms of anxiety in the current study was lower than the study conducted in Iran (Mirzaei et al., 2019) and a study from Saudi (Al-Gelban, 2007). Further, the reported prevalence of anxiety among males in the current study, was lower than that of Indian males who showed symptoms of anxiety (Sahoo & Khess, 2010). Although the study conducted in Iran (Mirzaei et al., 2019) showed strong statistically significant associations of anxiety with age, educational level, employment status and marital status of the adult population in Iran, the current study did not show a significant association of anxiety prevalence with the demographic factors considered.

The reported prevalence of symptoms of stress among study participants was higher than in the study conducted in Iran (Mirzaei et al., 2019). Although the study in Iran showed statistically significant associations of stress with age, educational level, employment status and marital status of the adult population (Mirzaei et al., 2019), the current study did not show a significant association with any of the demographic factors that were evaluated. The findings in the current study revealed that the individuals with comorbidities showed a higher prevalence of psychological distress which is consistent with the findings of a study which has reported that psychological distress was higher among the Australians with comorbidities (Holden et al., 2010).

Coping strategies

The results of the current study are consistent with the findings of a study conducted in the USA which revealed that more women were practicing coping strategies than men (Brougham et al., 2009). Differences among males and females in the use of coping strategies observed in the current study is consistent with a study conducted on gender difference in the use of coping strategies in United States of America (Kelly et al., 2008). The reason may be physiological differences between males and females. There was no previously published study on the prevalence of depression, anxiety and stress related symptoms among adults in the rural communities in Sri Lanka. Thus, the comparison of this study with the prevalence of depression among adults in other urban and rural areas in Southern province, Sri Lanka was not possible.

Limitations

Sample size for this study was based on a study conducted in India with the participation of males. This is a limitation of the study as the socio-cultural status in India is different from Sri Lanka and there may be differences in psychological status among men and women.

Conclusions

Adults in Nagoda Divisional Secretariat area in Galle, Southern Province of Sri Lanka showed a high prevalence of symptoms of stress followed by depression and anxiety. Further prospective studies are needed to follow up the individuals regarding fluctuations of emotional status with life events which will provide a more elaborated picture regarding symptoms of depression, anxiety and stress. Policy makers and health care professionals need to pay more attention to incorporate mental health development activities within public health services including community health nursing services to facilitate better quality of life with psychological wellbeing among Sri Lankan adults.

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Conflict of interest

The authors declare that they have no conflicts of interest.

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