A Study on the Psychological Impact of Covid-19 on Farmers

ABSTRACT

With the implementation of total lockdown of the nation in response to the COVID-19 pandemic by the government, it had unintended but detrimental effects on farmers and supply chains for agricultural commodities, which aggravated the farmers problems and disturbed them psychologically. Hence the study was undertaken to assess the Psychological, societal and economic impact of COVID-19 on farmers. The study was conducted using Ex-post facto research design in Raichur and Kadapa districts of Karnataka and Andhra Pradesh. Based on the diversity of crops grown and land type possessed by farmers, 9 taluks with 12 villages and 15 farmers from each village were selected, thus sample size of 180 was taken. A scale was developed to measure the psychological impact of farmers using 8 components and data was collected. The results indicated that, (38.89%) of the irrigated land farmers faced high psychological impact, followed by (35.56%) and (25.56%) farmers faced medium and low psychological impact. Among the dry land farmers, (38.89%) were under medium impact, followed by (32.22%) and (28.89%) facing low and high psychological impact. The overall impact on all the farmers showed that (37.78%) were belonged to medium psychological impact, while (33.89%) and (28.33%) faced high and low impact respectively.

Key Words: Covid-19, pandemic, farmers, scale, psychological impact.

1. Introduction

Humans have experienced numerous epidemics since ages, that are particularly lethal and resulted in greater death rates. Major epidemics such as plague, cholera, Spanish flu, SARS-CoV and MERS-CoV had already affected the mankind severely. They even wiped out the entire villages and small towns sometimes. In the similar lines of pandemics, the recent outbreak of the novel SARS-CoV-2 virus, also called corona virus 2019 (COVID-19), has evolved into one of the most serious pandemic situations in the past hundred years [1]. The Covid-19 disease slowly developed into a pandemic, starting with a small chain of spread from Wuhan city of China, which then culminated in a larger chain in many countries resulting in its spread around the world [2]. All nations throughout the world implemented lockdown measures to confront this life-or-death scenario, which accordingly restricted the human mobility and other activities. In order to slow the spread of Covid-19, India also ordered a 21-day countrywide lockdown beginning on March 24, 2020, for its 1.3 billion residents. Since then, the lockdown has beenprolonged many times.Despite the use of preventative measures, there were 4.46 confirmed cases of viral infection and 5.28 lakh fatalities (Worldometer, accessed 10th October2022). In any case, as Covid-19 cases expanded quickly, there had been an extraordinary worry about the ailment's latent capacity spread and effect [3].

The aftermath of a pandemic has not only negatively affected the health sector, rather it has resulted in distressing economic, social, and political crises that will lead to deep scars if it is not contained in time[4]. With the loss of commerce, trade, tourism, and major impacts on global supply chains, the economic impacts of the outbreak were vast both within India and globally[5]. Due to widespread Covid-19 mitigating measures taken at the national level, economic activities relating to Indian farming systems as well as farmers throughout the country had suffered several serious setbacks because of the exceptional circumstances, which arguably outweighed the direct Covid-19 impacts [6,7].

Agriculture plays a vital role in Indian economy. 54.6% of the total work force is engaged in agriculture and allied sector activities[8] and accounts for 18.8 per cent of GVA of the economy[9] . Among the rural households 70 per cent of them still depended primarily on Agriculture for their livelihood, with 82 per cent of farmers being small and marginal [10]. Risks including insufficient rainfall, price volatility, and mounting indebtedness are faced annually by Indian farmers, whose economic conditions are very vulnerable. However, the Covid-19 pandemic's hazards presented them with additional challenges and compounded

twice their anguish [11,12]With the imposition of strict lockdown measures and halt of the movement farmers faced severe difficulties in every aspect of farming, from the purchase of inputs, sowing and labour use to harvesting, marketing and processing of the produce [13,14]. Thus farmers in Maharashtra called it a worse situation than that occurred during the demonetization in 2016[15].Severe disruptions in supply chain lead to shrinking markets and falling out prices depriving farmers economic status [6,13].

The pandemic is viewed primarily through a biological lens because of its greater impact on health and the economy, but many people have disregarded its long-lasting psychosocial repercussions [16].Although Covid-19 may have a direct impact on people's mental health and wellbeing, measures to prevent infection like lockdown could also have indirect socioeconomic and psychological consequences. [17,18].The pandemic thus aggravated the risk of acquiring disorders including stress, anxiety, depression and suicidal thoughts. Farmers were one of such vulnerable groups hit by the pandemic and experienced psychological distress [19,20].With disruptions in supply chain, marketing linkages and notenough financial resources for purchasing critical inputs, difficulties in availing labor timely, closure of many mandis, farmers left with burden of increased debts and highly stressed [21].Along with this the reverse migration of family members and daily wage workers created additional burden on the farmers and also created fluctuations in the wage rates. Hence the psychological challenges can be severe to marginalized among the farmers who already have greater sufferings due to pre-existing problems in the agriculture sector [22], due to uncertain weather and other risks[18]. In addition to impact on agriculture, most of the rural people were deprived of basic medical facilities and proper health check-ups, timely treatment if infected with Covid-19 [23]. Thusruralites left with great fear of infection.

Recent studies in psychological science evidence show that similar pandemics like the current one have increased mental health problems like post-traumatic stress disorder, confusion, loneliness, anxiety and fear during and after the lockdown too. In such scenario these issues cannot be left unaddressed in the better interests of the farming community, their families in particular and the prosperity of the nation in general. Hence, in order to better understand the impact of Covid-19 on the psychological conditions of Indian farmers a need was felt to further probe into the issue with the following specific objective.

i) To study the psychological impact of Covid-19 on farming community.

2. Methodology

The study was conducted in Raichur district of Karnataka and YSR Kadapa district of Andhra Pradesh during the year 2021-22. Ex-post-facto research design was used for this study. Based on the diversity of crops grown and type of cropping ecosystems present in the villages, 5 taluks of Raichur *viz.,* Raichur, Lingsugur, Manvi, Devdurga and Sindhanur and 4 mandals of Kadapa *viz.,*Vempalli, Vemula, Pendlimarri and Veerapu Nayani Palli were selected for conducting research. From each taluk and mandal one or two villages were selected randomly thus, finally considering 12 villages. Among these 12 six villages were with irrigated farming systems and remaining six were with dry land farming ecosystems. From each such selected villages, 15 farmers were selected by simple random sampling method. Thus, the total sample size taken for this study purpose was 180 respondents

A scale was developed using Likerts summated rating method (1932) [24] to measure the psychological impact of pandemics in particular and Covid-19 in specific. The scale consists of 8 components namely Anxiety, Depression, Dissatisfaction, Irritability, Indecisiveness, Social withdrawal, Self efficacy and Post traumatic stress with a total of 32 statements. Through a structured interview schedule the data was collected and analyzed using various statistical tools.

3. RESULTS AND DISCUSSION

3.1 Association of farming systems with psychological impact

In the study, an effort was undertaken to determine whether the farmer's type of land and the degree of psychological effect they experienced were associated. Accordingly, the Chi-square (χ^2) test was used. The Chi-square statistic is a non-parametric (distribution free) tool designed to analyze group differences [25]. The χ^2 test value is found to be 71.870** which is significant at 1 per cent level of significance (table 2). Further, the t-test was carried out to find the existence of variation in the impact levels among dry land and irrigated farmers. The t value obtained was 1.752 and the F value was 4.229* which is significant at 5 per cent level of significance (table 1). The results clearly depicts that there exists differences in the level of psychological impact among farmers under different ecosystems.

Table 1: t-test on impact level of farmers under different agricultural situations

Situation	Sample size	Psychological impact		F	t value
		Mean	S.D		
Irrigated	90	106.01	24.88	4.229*	1.752
Rainfed	90	105.80	22.96		

** = Significant at 5% level, S.D = Standard deviation*

When compared between irrigated and dry land farmers, the higher impact was found with irrigated farmers as they were mostly growing horticulture crops and the majority of dry land farmers were growing cereal crops. With their high perishable nature, the fruit and vegetable farmers i.e., horticulture farmers faced the problems of quality deterioration's due to restricted transportation and extreme marketing disruptions [26,27]. After poultry sector horticulture was the second most hit in terms of reduction in farm gate prices of the produce [28]. Thus, they reported that not even a quarter of the production costs were met [15]. While the dry land farmers managed to store their produce with low quality damage to the produce and also farmers got MSP for their produce [22]. Thus despite market delays, they received half to three-fourths of the production costs. This might be the reason for the major difference in psychological impact between irrigated and dry-land farmers. The heavier economic losses in case of the irrigated farmers (horticulture farmers with perishable goods) compared to later ones (farmers with semi and Non-perishable goods) [27,29] disturbed and threatened them more in turn aggravating their psychological illness.

3.2 Psychological impact of Covid-19 among the respondent farmers

Among the farmers under irrigated conditions,38.89 per cent experienced high psychological impact, followed by 35.56 per cent with a medium level and 25.56 per cent with a low level of psychological impact. Whereas under dry land conditions, 38.89 per cent of farmers reported a medium level of psychological impact, followed by 32.22 per cent and 28.89 per cent expressing low and high levels of psychological impact, respectively.

Table 2: Distribution of respondents according to their psychological impact underdifferent agricultural situations

Sl.No	Impact	Agricultural situations					
		Irrigated (n=90)		Dry land (n=90)		Total (n=180)	
		F	%	F	%	F	%
1	Low	23	25.56	29	32.22	51	28.33
2	Medium	32	35.56	35	38.89	68	37.78
3	High	35	38.89	26	28.89	61	33.89
		$\bar{X}$= 106.01 σ =24.88		$\bar{X}$ = 105.8 σ =22.96		$\bar{X}$=105.41 σ =23.91	
Chi-square value = 71.870**							

***=** Significant at 1% level F=frequency % = percentage*

In total nearly two fifths (37.78%) of the respondents experienced a medium level of psychological impact, whereas one third (33.89%) reported high and 28.33 per cent low levels of psychological impact, respectively (table 2).

Apart from health and economic crisis, mental illness is the major challenge faced by people of all walks of life who were affected directly or indirectly by the pandemic (Covid-19) [22]. It resulted in additional health issues like anxiety, depression, stress, dissatisfaction etc. [30,31]. Farmers are no such exception and one of the vulnerable groups [19] and their health is a serious concern during such pandemics to ensure food security [31]. Psychological disturbances are known to be common among farmers even under normal conditions when there are no pandemic situations because of their moderate to poor economic conditions and the high unpredictability of the farming sector. In addition to these factors, farmers were seriously affected as a result of disruptions due to Covid-19 lockdown measures. In many

regions of the country, farmers are unable to harvest their standing rabi crops due to a lack of labor, and at the same time they lack the financial assistance to buy essential inputs like seeds, fertilizers, and pesticides, insecticides, feed for the livestock etc. [20,32,12]. This in turn affected crop production, livestock production, total economic output etc. [19]. They faced severe disruptions in the supply chain, various market linkages, extension agency contact resulting in aggravated financial problems [13,33]. Closure of restaurants, small shops, road side tea stalls etc. reduced the demand for dairy, poultry and fisheries products and reduced the income of farmers from the allied agricultural sectors also [34,35,36]. Additionally, during the early lockdown periods, the majority of Agricultural Produce Marketing Committees (APMC's) remained closed, depriving one of the means that farmers could market or sell their produce [36,37].

Along with the problems in farming and income, the farmers were now highly threatened even with physical health issues, and unfortunately they have limited access to mental health services. Healthcare facilities like very less availability of number of beds per thousand people, equipment and so forth [7,22]. The respondents even reported lack of availability of medicines for other health problems within the village, which made them feel anxious and tensed. Reverse migration is another issue that has caused farmers and other rural residents to feel quite concerned and distressed about infection. Numerous case studies and news articles revealed that rural residents were terrified about the idea of the reverse migrants carrying the virus into the villages and spreading it there and created several social impediments to the reverse migrants [38,39]. Also the availability and wage rates of the laborers got highly disturbed,[7,40,41] thus impacting psychologically both farmers and reverse migrants respectively.

The changes in consumption patterns were also made by the farmers due increased prices and unavailability of regularly consumables within their vicinity [26,42]. The restriction of movement out of their village, no social gatherings, increased hoaxes about infection in social media and high desocialization was experienced by the farmers and they felt more stressed and concerned thus experiencing anxiety, depression and other psychological disturbances [2,43]. Therefore, these changes in the farmers means of subsistence caused significant disruptions among them, which in turn contributed to the deterioration of their psychological state.

The impact from both sides, i.e., physically and financially at the same time, might had created greater mental health illness with a stressful environment around them. Also, majority of the farmers were in their middle to old age with the chance of more health complications and their concerns were aggravated because of Covid-19. In addition most farmers are small and marginal and do not have any financial support and they received weak assistance from the government side which might be one of the reasons for majority of the farmers stating medium to high psychological impact levels, with an exception to young, educated and financially stable farmers expressing low psychological impact.

3.3 Component wise agreement by the irrigated and dry land farmers

The component wise impact levels of farmers were expressed in percentages (Table 3) based on the agreement and strongly agreement response given by the respondents. Among the farmers under irrigated conditions 65.55 per cent reported getting irritated followed by 62.50 per cent and 61.56 per cent farmers feeling anxious and depressed during the pandemic. With respect to dry land farmers 62.00 per cent agreed that they felt irritable and 60.22 per cent farmers were psychologically disturbed and felt that they were withdrawn and isolated from the social groups.

Table 3: Percentage of component wise impact felt by the irrigated and dry land farmers

Sl.No	Components	Percentage	
		Irrigated farmers	Dry land farmers
1	Anxiety	62.50	58.61
2	Depression	61.56	55.00
3	Dissatisfaction	41.11	36.12
4	Irritability	65.11	62.00
5	Indecisiveness	42.78	38.73
6	Social withdrawal	59.45	60.22
7	Self efficacy	55.96	53.14
8	Post traumatic stress	52.22	52.59

4. CONCLUSION

The study revealed that there exists a significant impact on the psychology of the farmers which is indirectly due to Covid-19 virus and directly due to imposition of lockdown and movement of the farming produce and people. The main reasons were the hardships faced by the farmers in completing their timely agricultural operations and marketing restrictions. Despite the government's decision to spare the agriculture sector from the lockdown, farmers nonetheless faced a number of challenges when it came to marketing and carrying on with their agricultural operations. In case of any unprecedented calamities and natural disasters leading to lockdown in future, the relaxations provided by top authorities regarding movement of agricultural produce need to be clearly conveyed to ground-level authorities to ensure that they are implemented effectively or else farming operations could get impacted. As and when such pandemic outbreak leads to stress, anxiety and depression, the farming community needs to be timely informed about the pandemic's effects, its precautionary measures, and coping mechanisms. The inputs required by the farmers need to be made available within their proximity at least during natural calamities and the different departments related to agriculture should collaborate to assess the various field situations for providing required solutions to the farmers.

Strengthening and decentralization of the medical facilities in the rural areas, rapid diagnosis and treatment are especially important. The relief measures provided by the government need to be strengthened and a mechanism to provide compensation for loss which occurred due to transportation delays and closure of markets in their areas need to be promoted. Counselling sessions for strengthening the mental health of the farmers should be conducted by the extension personnel and other professionals.

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