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Workplace stress and coping mechanism in a cohort of Indian service industry

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ABSTRACT

The purpose of this paper was to explore workplace-stress perceptions and stress coping mechanisms used by employees of different age-groups in services. The study further examined the relationship between stress coping mechanisms and workplace-stress perceptions of employees, by underpinning literature-based evidences to results. The study investigated workplace-stress and coping mechanisms of randomly selected employees (n = 204) of three sectors of service industry. Descriptive statistics, analysis of variance and related post-hoc tests were used to examine different research questions in the study. The study was primarily designed to study the impact of gender, age, management level and organizational ownership on stress perceptions and coping mechanisms of employees. The results suggested that perceived workplace-stress and stress coping mechanisms differ significantly with age while other factors reported insignificant differences. Interestingly, the older employees scored high on the use of coping mechanisms but their perceived workplace-stress was also high in comparison to their younger counterparts. The study attributes high stress-perceptions in older employees to the new stressors at work, thereby negating the experience theory widely used in explaining high coping ability of older employees at work.

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1. Introduction

Positive workplace-stress is desirable but negative stress can lead to dysfunctional consequences (Anderson & Pulich, 2001). According to Karasek (1979) job demand–control (JDC) model, stressful response is a result of imbalance between employees' job demands and their potential to control the task. Hence, where the work is simultaneously high in demand and low in control, it would produce job stress or job strain. Perceived job stressors in employees are feelings and perceptions of disparity between available time, ability, skill, or resources and demands of the job at a given time (Shoib et al., 2019; Lazarus, 1990). The fierce competition in the present times has led to an increased number of corporate stressors as predicted by Cartwright and Cooper (1997) in defining future workplace stressors and managing workplace stress.

Workplace stressors are potential conditions that can make employees perceive stress (Coetzee & De Villiers, 2010). These potential conditions or stressors could be organizational change (Smollan, 2015), difficult relationships at work (Colligan & Higgins, 2006), perceived fairness in resource distribution by managers (Greenberg, 2004), bureaucracy, autonomy, tools and equipment, workload, role ambiguity, work/home interface, job security and career advancement (De Bruin & Taylor, 2005). These job related stressors can lead to arousal of unpleasant emotions such as tension, anger, anxiety, frustration or depression (Kyriacou, 2001). Among more recent work-stressors, technology induced stress or techno stress is discussed in literature (La Torre et al., 2019; Suh & Lee, 2017).

Threat caused due to workplace stressors can cause a disturbance in a steady state leading to stress and failure to cope with the situation can result into continued stress (Cartwright & Cooper, 1997). Continued stress leads to significant risk of developing physiological and psychological disorders in individuals and results in lowered efficiency, job dissatisfaction, declining performance and affects mental wellbeing (Teasdale, 2006). Stress has numerous devastating effects on the workplace environment (Lambert et al., 2003) and hence work stress and stress coping have been

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researched in several contexts.

Coping has been viewed as a response to an emotion (Glanz & Schwartz, 2008), particularly unpleasant emotions. People adopt both problem-focused coping and emotion-focused coping strategies to deal with stress. While active problem-focused coping intends to remove the stressor (Carstensen et al., 2003) by actions such as taking charge of situation, working on alternatives and asking for support; emotion-focused coping includes all the regulative efforts to diminish the emotional consequences of stressful events (Schoenmakers et al., 2015). Emotion-focused coping includes both avoidance strategies like escapism, wishful thinking and denial and emotional strategies such as efforts to acknowledge, understand and express emotions (Terry & Hynes, 1998). Literature has examined among other factors, the effect of gender (Liddon et al., 2018; Bonneville-Roussy et al., 2017; Matud, 2004), culture and region (Persike & Seiffge-Krenke, 2016), race (Assari & Lankarani, 2016), personality traits (Afshar et al., 2015) and, education level (Finkelstein et al., 2007) on adoption pattern of different coping strategies. In studying homogeneous groups, age is also found to be a very critical factor in gauging employee stress. The discovery of age – effect on workplace stress and coping is important to understand the generational response to work-stressors in the contemporary times, given the mixed nature of workforce in organizations comprising of X, Y and millennial generations.

Previous studies have moderated intersection of workplace-stressors and employees' ability to cope (Shoaib et al., 2019; Hertel et al., 2015), with age. Studies have reported high active coping and lower levels of stress among older workers as compared to their younger colleagues (Hertel et al., 2015; Ng & Feldman, 2010). Studies have also asserted that higher job skills & task expertise (Heckhausen et al., 2010) and higher self-regulation skills (Charles, 2010) attribute to high active coping among older workers. Researchers have further added the effect of perceived controllability of stressful situation on coping strategies used by different age groups. Blanchard-Fields and Irion (1988) found that with advancing age people are more likely to use problem-focused strategies in perceived controllable situations and use emotion-focused strategies in perceived uncontrollable situations as compared to younger people who are more emotion focused irrespective of controllability. Aldwin (2011, pp. 15–34) also added that experience, appraisals of stress and attribution of responsibility helps older people to know which strategy is best in a given situation and thus makes them efficient stress copers. However, literature also points out negative relationship between occupational growth and age (Robson et al., 2006) and underscore higher level of stress among older employees due to factors such as task overload (Shoaib et al., 2019). Studies also reveal that for a given level of task performance, older adults have to expend greater effort than younger adults (Bunce & Sisa, 2002), thereby creating a situation of stress for them. With advancing age, people experience reduction in cognitive resources (Shultz et al., 2010) and this negative relation between age and cognition (Salthouse, 2016) results into decline in the processing speed.

Prior studies have collected evidences on coping abilities of different age groups of employees by investigating work-stressors in varied contexts. These studies indicate high stress coping abilities of older employees vis-a-vis their younger counterparts but fail to report relative perceptions of stress and coping abilities between employees of different age-groups. The majority of these studies point out the ability of older workers as superior stress copers but there is lack of research in explaining samples with high stress perceptions despite superior coping abilities. The time is witnessing changes in the way people work in today's knowledge era, resulting into new workplace stressors. These 'new work-stressors'

indicate conditions at work that have not been experienced previously and cannot be conveniently overcome or avoided by employees using traditional individual – level coping strategies in the absence of organizational support. This study posits that despite having superior stress coping ability by an age cohort, the perceptions of stress can be high due to new stressors at work. Hence, there is a possibility of linear relationship between superior coping skills and high stress perceptions. Based on this argument, the objective of this study was to examine if there is a difference in perceptions of workplace stress among different age groups of employees and also in their use of coping mechanisms and general stress coping ability. Additionally, the study sought evidences from the literature that could be underpinned to the results.

In this study we intended to answer two research questions; first, "Do mean scores of perceptions of workplace-stress differ in different age categories of employees?" and second, "Do mean scores of each type of coping mechanism and overall stress coping ability differ in different age categories of employees?". Based on the first research question, this study intended to test the null hypotheses of "no difference of mean workplace-stress perception scores among three age categories of employees across all the sectors". Similarly, to answer the second research question the null hypothesis of "no difference among the mean scores in different age categories on each parameter of stress coping mechanisms and overall coping" was tested.

The current study is expected to contribute to the literature (i) by explaining age differences in coping and work-place stress perceptions (ii) by theorizing new work-stressors in explaining stress perceptions, and (iii) by integrating active stress management strategy, as perception influencer, into occupational stress research.

2. Methods

The study was delimited to the employees of Insurance, Banking and Telecommunication sectors in the Gwalior Chambal region of the state of Madhya Pradesh in India due to convenience in data collection. The purpose of selecting these sectors was that these sectors were comparable in terms of markets, products, workforce structure and qualification level of employees. Using random sampling method, data of 204 employees from organizations of all the three sectors was collected in the year 2018, across 24 job categories from middle and lower management level jobs. The sample size 204 was selected to have 90% power in the study for medium effect size of 0.25, as per the Cohen's guidelines, at 5% level (Verma & Verma, 2020). The age-range of workforce in these sectors was typically from 22 years to less than 60 years. The qualifications of these employees were graduation or above mostly from state owned schools that have moderate level of educational quality. Based on this range, the sample was divided into three age categories based on similar studies (Matthews et al., 2010); young employees in the age bracket (≤ 30), middle-age employees in the age bracket (31–45 years) and older employees in the age bracket (>45 years).

The study administered two surveys on the same subjects to map their stress and coping strategies. The American Institute of Stress (AIS) (2011) questionnaire is a simple screening measure developed by The American Institute of Stress to measure stress levels among employees and the same survey was administered to assess stress perceptions in the three different categories of employees. AIS workplace stress survey uses a total score of 10×10 matrixes to report the perceived ability to handle stress. The lower scores on AIS workplace stress survey indicate better workplace stress handling ability and higher scores indicate problems in encountering workplace stress. A second survey was administered

on the same set of employees to measure general stress coping mechanisms adopted by them and their overall stress coping ability. Self-assessment stress coping resource inventory of NYSUT social services (2013) was used to gauge stress coping mechanism among three different age categories of employees. The thirty-two items self-assessment stress coping resource inventory is divided into six coping mechanism that include questions on physical wellness, thought control, active coping, social ease, tension reduction and spiritual practice. The higher scores suggest superior stress-coping ability and consecutive lower scores indicate decreasing ability as a stress-coper.

A pilot survey was carried out to measure the workplace stress perceptions of the employees working in these sectors. The employees belonged to Hindi speaking belt and not all of them were comfortable with test instruments in English language. Hence the questionnaires were translated into Hindi and the sample collectors read out the questions to employees in small groups in both Hindi and English languages to reduce gaps in interpretations. Reliability of the data obtained on workplace stress and coping strategy was established by using test-retest method on 20 subjects; correlation between test-retest data on both the parameters were between 0.8 and 0.85 which is fairly good for a questionnaire study. Simple random sampling was used to collect the data, as data could only be obtained from the employees who were willing to fill out the survey instruments. The sampling strategy was to maximize the sample size, given the resources and access available to the data collectors. The senior managers of respective organizations were involved to ease the data collection from their employees. The respondents were well-informed about the purpose and implications of the study. Out of the total questionnaires that were administered, completed questionnaires were received with 68% and 71% response rate for AIS survey and stress coping resource inventory survey respectively. The data collected through both the surveys was statistically analyzed, by pulling comparative sample size in all the three groups to reduce sample size errors.

The data collected through each instrument was analyzed using IBM SPSS software ver. 22.0. One-way ANOVA was used to test whether any significant difference existed between the groups. Prior to running the test, the assumptions related to ANOVA were tested to check the suitability of the data for this test. The data was tested for its normality and homogeneity. The Shapiro Wilk test and Levene’s test were used to test the assumptions of normality and homogeneity of data respectively. The normality was mildly violated whereas homogeneity was mildly violated for the data on social ease parameter of coping mechanism. Since, assumptions of normality and homogeneity were not severely violated, one way ANOVA test was applied to test the null hypotheses derived from each of the research questions. Tukey HSD post-hoc test was used to identify the groups with significant differences.

3. Results

The data on workplace-stress handling ability (AIS Survey) was analyzed using one-way ANOVA, the results of which have been shown in Table 1 and Table 2. Since lower score on AIS survey

Table 1
Descriptive Statistics on workplace-stress handling ability perception.

Age category	N	Mean	Minimum	Maximum
≤30yrs	68	42.06	10	59
31–45 yrs	68	54.96	14	88
>45yrs	68	60.31	14	88
Total	204	52.44	10	88

Table 2
ANOVA table on workplace-stress handling ability perception.

	Sum of Squares	df	Mean Sum Squares	F	Sig.
Between Groups	11,969.147	2	5984.574	23.098	.000
Within Groups	52,079.147	201	259.100		
Total	64,048.294	203			

implies better stress handling perception, Table 1 shows that the stress handling ability perception is lowest among the employees in >45 years age category whereas it is maximum in <30yrs age category. The results of ANOVA in Table 2 shows that the null hypothesis of no difference in the mean workplace-stress handling ability perception scores in three different age categories of employees across all the sectors is rejected at 5% level (p = .000). The Tukey HSD test was applied as a post-hoc test, the result of which is shown in Table 3. This table reveals that the employees in age categories 31–45 and > 45 had similar level of workplace-stress handling ability perception and is lesser than that of the employees in ≤30 years age category. The contents of Table 1 have been used to construct the means plot shown in Fig. 1.

As per the AIS survey results, the mean score of perceptions of workplace-stress for employees is in the range of 41–61 which indicates that perception of job stress is “moderately well” for young and middle-aged employees but older employees are encountering problems with their ability to handle stress at work. There is a significant difference in the scores of perceptions of workplace stress of young and middle-age employees and young and older employees, with scores of young employees indicating better ability to handle workplace stress. This implies that stress perceptions of older employees are the highest, followed by middle aged employees and lastly the young employees.

To assess the effect of age on different parameters of coping mechanism, one-way ANOVA was applied on the data obtained by administering the self-assessment stress coping resource inventory. The results are shown in Table 4, Table 5 and Table 6. Table 5 reveals that no significant difference existed among the employees in three different age groups for coping mechanism related to thought control, active coping, social ease, whereas significant differences were observed for physical wellness, tension reduction, spiritual practice and overall stress coping mechanism (average score). Post hoc test was applied to further investigate the group difference in each of the four significant parameters. The contents of Table 4 have been used to construct the means plot shown in Figs. 2–5.

Results of the post hoc test shown in Table 6 reveals that the coping mechanism on wellness scale is same among the employees in age categories ≤30 and > 45 and is higher in comparison to that of the employees in the middle age category (31–45)yrs. Similar trend exist in the tension reduction coping mechanism. On the spiritual practice scale, employees in the age category >45 have

Table 3
Post Hoc Tests on workplace-stress handling ability perception multiple comparisons tukey HSD

I) Age_cat (yrs)	J) Age_cat (yrs)	Mean Diff. (I-J)	SE	Sig.
≤30	31–45	–12.897	2.761	.000
	>45	–18.250	2.761	.000
31–45	≤30	12.897	2.761	.000
	>45	–5.353	2.761	.130
>45	≤30	18.250	2.761	.000
	31–45	5.353	2.761	.130

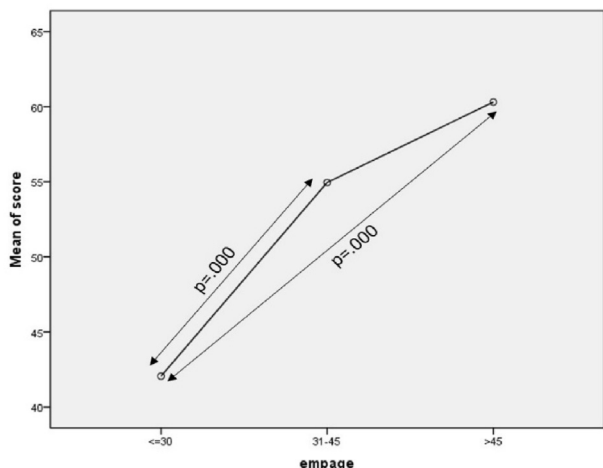


Fig. 1. AIS workplace stress perceptions means score.

Table 4
Mean score of different parameters of stress coping mechanism.

Parameter	Age category (yrs)		
	≤30	31–45	>45
Wellness	3.10	2.91	3.20
Thought control	2.83	2.89	2.99
Active coping	2.91	2.92	2.98
Social ease	2.96	2.98	3.05
Tension reduction	3.10	2.68	3.33
Spiritual practice	2.91	2.71	3.05
Average score	2.97	2.85	3.10

higher scores in comparison to that of employees in the other two categories. Significant differences were reported in the overall stress coping mechanisms' scores of three age-categories of employees. As per the interpretations of the survey, the results show that all the three categories of employees are "average stress copers" but within this average category, the score of older employees is the highest followed by younger employees and is the lowest for middle aged employees. On the overall average coping

Table 5
ANOVA table for the data on stress coping mechanism.

		Sum of squares	df	Mean square	F	Sig.
Wellness	Between Groups	3.251	2	1.626	6.825	.001
	Within Groups	50.256	211	.238		
	Total	53.507	213			
Thought Control	Between Groups	.976	2	.488	2.266	.106
	Within Groups	45.451	211	.215		
	Total	46.427	213			
Active Coping	Between Groups	.197	2	.098	.424	.655
	Within Groups	48.960	211	.232		
	Total	49.157	213			
Social Ease	Between Groups	.328	2	.164	.729	.484
	Within Groups	47.489	211	.225		
	Total	47.817	213			
Tension Reduction	Between Groups	15.719	2	7.860	17.808	.000
	Within Groups	93.124	211	.441		
	Total	108.843	213			
Spiritual Practice	Between Groups	4.074	2	2.037	5.715	.004
	Within Groups	75.197	211	.356		
	Total	79.271	213			
Average Score	Between Groups	2.290	2	1.145	13.006	.000
	Within Groups	18.575	211	.088		
	Total	20.865	213			

Table 6
Post Hoc Test for the data on stress coping mechanism multiple comparisons tukey HSD

Dependent Variable	(I) EmpAge	(J) EmpAge	Mean Diff (I-J)	SE	Sig.
Wellness	≤30	31–45	.19,191	.08085	.048
	31–45	>45	-.10,297	.08310	.432
Tension reduction	≤30	31–45	.42,113	.11,006	.001
	31–45	>45	-.22,748	.11,312	.112
Spiritual Practice	≤30	31–45	.19,235	.09890	.129
	31–45	>45	-.14,225	.10,165	.343
Average score	≤30	31–45	-.33,460	.09965	.003
	31–45	>45	.11,841	.04915	.044
	31–45	>45	-.25,259	.04953	.000

mechanism score, the three age-categories reported significant difference with scores of 2.97, 2.88 and 3.1 for young, middle and older employees respectively. The higher score on stress coping inventory scale indicates better stress copers. This implies that older employees are better stress copers than younger and middle aged employees. Hence, the scores of the two surveys indicate that though older employees are superior stress copers but they also feel high stress at workplace.

4. Discussion

The results indicate the highest score of older employees in active coping strategy vis-à-vis their younger counterparts. Older employees also have significantly higher scores in passive coping strategies such as tension reduction and spiritual practice than middle-aged employees. It implies that older employees are adaptive in the use of both active and passive coping strategies as argued by Aldwin (2011, pp. 15–34). But despite high scores as compared to middle and young employees on general stress coping ability, the older employees feel the most stressed at workplace as per the AIS survey results.

It is possible that job demand-control gap is higher for older employees due to new work-stressors and not the traditional work-stressors that support the experience theory. Korthase et al. (2018) for instance, found age to moderate the relationship between the

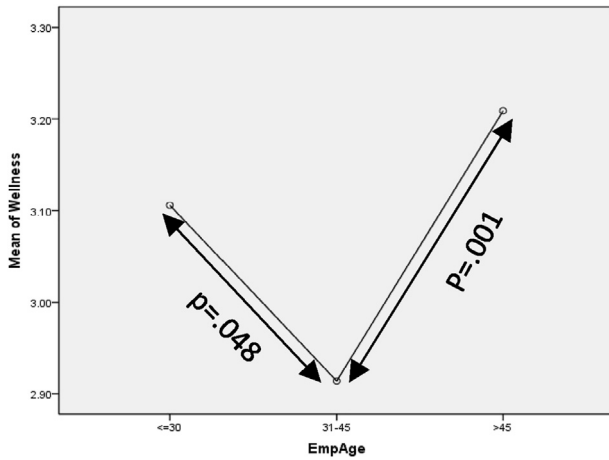


Fig. 2. Means plot-wellness.

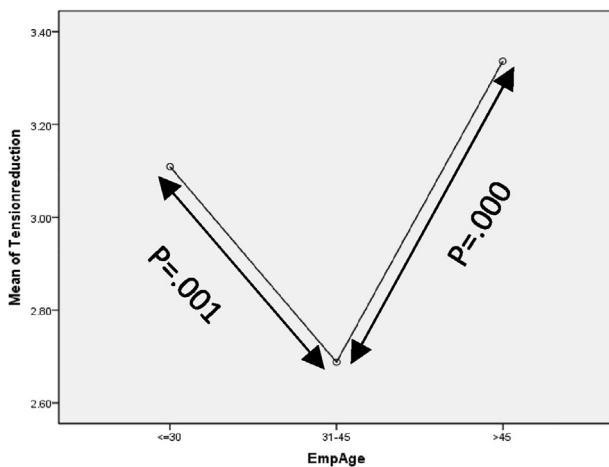


Fig. 3. Means plot-tension reduction.

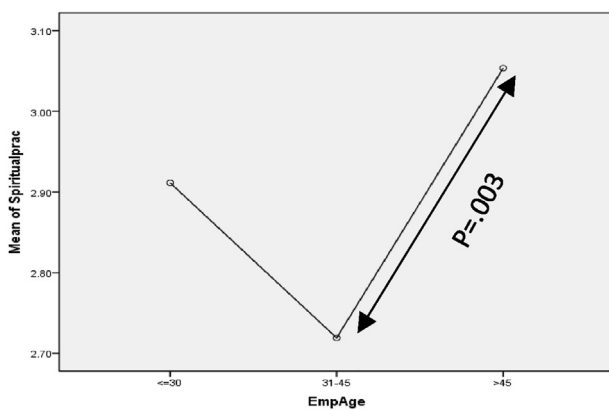


Fig. 4. Means plot-spiritual practice.

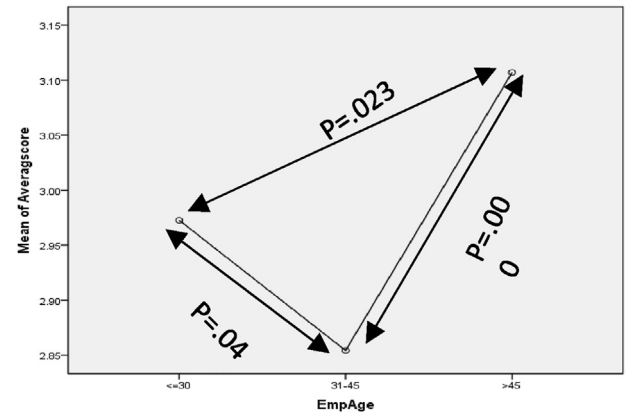


Fig. 5. Means plot-average score.

use of technology and work-related stress. According to the Job Demands-Resource theory, the older employees may perceive technology as a job demand, such as modern IT based interruptions like notifications & IM (Tams, 2017) for formal communication, thereby increasing their technology induced stress or techno-stress whereas young employees might view it is a resource to meet job expectations. Higher technology diffusion in services is also leaving

workforce redundant (Kumar et al., 2011). Hence, techno-stressors such as fear of redundancy and inability to actively use technology as a resource can act as antecedents of other work-stressors (Maier et al., 2015). Other work-stressors, as mapped through AIS survey, include workplace discrimination and lack of - potential control, trust and respect, work engagement, autonomy and recognition.

Since age is negatively associated with perceived control due to reducing cognitive processing (Aldwin, 1991), the psychological demands of jobs interact differently with controls for younger versus older employees (Shultz et al., 2010). While older employees might appraise some organizational stressors as threat, younger employees are more likely to appraise their problems as challenges (Aldwin & Levenson, 2001). Drawing on socio emotional selectivity theory in life-span theories, there is also a likely decline in motivation to gain new knowledge with age. This, when intersected with reducing capability to learn with age (Raemdonck et al., 2015) could become a source of potential stress for aging employees.

It may also be interpreted from the results that since older employees perceive high workplace stress due to unfamiliar work-stressors, therefore their corresponding stress coping scores are also high. This implies that older employees are using higher variety of active and passive strategies vis –a-vis younger employees to cope up with stress but lack of effectiveness in dealing with work-stressors results in high stress perceptions. High work-stress perceptions of older employees could also suggest organizational barriers, such as negative stereotypes about aging workers and lack of supportive environment for older employees (Hertel et al., 2015; Raemdonck et al., 2015). These organizational factors can play an important role in influencing stress perceptions of older employees.

4.1. Implications of the study

This study has meaningful theoretical implications. While most of the studies on stress and coping associate advancing age with less stress and higher stress coping abilities among older employees, the results of this study highlight that despite higher stress coping abilities, the perceptions or feelings of stress could be high in older employees. This could be due to new work-stressors that they have never experienced before. The study suggests that new work-stressors create situation at work that is compelling in nature, cannot be avoided and have never been experienced before, for instance ability to use new technologies conveniently and creatively for effective customer outcomes. Prior studies supporting deficit hypothesis have discussed about reducing cognitive abilities with age and a decline in motivation to learn new skills as indicated in socio-emotional selectivity theory (Salthouse, 2016; Shultz et al.,

2010; Carstensen et al., 2003; Bunce & Sisa, 2002). This coupled with compelling need to adapt or acquire new skills results into high stress perceptions in older employees, despite higher use of coping mechanisms by them than other age groups. The study therefore negates the skill, expertise or experience theory used in explaining higher coping ability of older employees (Aldwin, 2011; Baltes et al., 2005, pp. 47–71; Charles, 2010; Heckhausen et al., 2010), in the context of new stressors at work.

The study has important practical implications for service organizations that are willing to reduce workplace stress and its ill-effects on organization. Despite significant difference in the use of mixed strategies to cope up with work-stressors, the older employees have high stress perceptions. Organizations must appreciate the fact that new work-stressors, such as increasing use of technology, are unavoidable and therefore it is imperative to enhance active coping efforts toward such stressors. Identifying modern day work-stressors and facilitating active coping efforts at organizational level, by examining threat appraisals of different age groups, might reduce negative work-stress perceptions. Coping resources such as self-efficacy, optimism, co-workers support, and supervisor support that are related positively to problem-focused coping strategies (Van den Brande et al., 2016) should be fostered in organizations through longer duration of trainings, redesigning work and creating a humiliation free work environment. Significant relationship has also been reported between leadership style and psychological outcomes such as employee stress and affective well-being (Skakon et al., 2010). Organizational leaders must therefore take appropriate measures to reduce emotional exhaustion (Khan et al., 2020) in employees.

4.2. Limitations and future research

First, in this study the concept of new work-stressors is captured only through threat appraisals due to technology. Future studies may utilize broader range of sources of modern-day work-stressors to explain high stress perceptions. Second, the age categories used in the study and interpretations based on those categories were relevant for banking, telecommunication and insurance sector; it might be incorrect to apply similar age cohorts for service sectors that have higher number of older employees in the middle and senior management, as work-stressors and resources for those management levels might be different and hence stress perceptions. Lastly, the research focuses heavily on stress perception and coping mechanisms of older employees ignoring the other two age-categories that might have similar or different concerns. The future research could explore further into the relationship among modern day job-stressors and coping mechanisms by moderating the effect of organizational initiatives in facilitating active coping at workplace.

5. Conclusion

Using stress surveys, this study investigated the stress perceptions and coping strategies of employees in different age groups. The findings did not support the proposed hypothesis and significant differences were reported in stress perceptions and coping mechanisms between age-categories. Surprisingly, the older employees reported high stress perceptions despite highest coping scores. The study explained these observations by defining new work-stressors thereby negating the experience and expertise theory utilized by most of the studies to explain stress coping in older employees. The study provides an informative insight into stress perceptions of employees of different age-categories and their coping mechanisms and advocates organizational interventions for supporting active-coping skills among employees.

The study paves way to future research in identifying new work-stressors and their influence on stress perception of employees.

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