Stress Management In The Construction Industry-Coping Strategies For Project Managers

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Abstract— In today's changing and competitive work environment, stress level is increasing both among team members and PM's. As a result of this work stress, more and more managers are showing signs of chronic fatigue and burnout. The role of a PM comprises of many areas such as managing people, stakeholders and the expectations of clients. Stress becomes noticeable when the PM fails to manage its role efficiently or get caught up in the enormity of the task, both mentally and physically. The inability of the PM to manage its roles effectively can bring permanent breakdown. In addressing this situation, this paper discusses areas of workstress among project managers, its effects and coping strategies to adopt in a stressful situation.

Keywords—PM (project manager); Stakeholders; Stress; Team members

I.   INTRODUCTION

Today's project management demands a high level of quality delivery and project success. Therefore, the pressure is maul on individuals at various levels of the project. Performance targets are becoming cohesive daily due to high expectations on project evaluations which makes the task of a PMs more rigorous and stressful and also the fact that project itself being a temporary activities is limited to a specific time and budget. Although some workplace stress is normal, but stress among project managers is excessive due to the limitation on time, performance targets and budget which can put more pressure on the project manager [36]. Workplace stress can interfere with team players and the project manager's productivity and it can have a negative impact on their physical and emotional wellbeing.

Some school of though believe that PMs Stress cannot be curtailed but the fact remains that stress can be managed to a reasonable level of certainty. Stress is a growing problem in today's society, leading to decreased well-being, uneven burnout at a social and monetary cost [1]. Project management are no doubt one of the most stressful jobs in today's innovative environment because of the direct responsibilities for various activities that can lead to the success or failure of a project. Some project managers believed that they can handle and cope with the high level of stress but there are some who are ignoring or refusing to recognize that they are under stress [2]. He further explains that the experience of stress is not only impacting the cognitive and behavioral performance of PMs, but it has a negative impact on their personal health. It is therefore important to manage the stress before it becomes more and more difficult to handle and manage. Although certain amount of stress can enhance a person's performance but too much stress can have reverse impact on a person's health resulting in lower productivity [3].

II.   THEORETICAL FRAMEWORK

A.   Stress Definitions and Principles

Stress and mental health is highly imperative to any project managers due to the sturdy nature of the job, therefore reducing a stressful situation whenever possible will be of benefits for the success of the project and the team members showing any sign of stress. Stress has many definitions but the same meaning and interpretations. Stress according to [4] was defined as a physical and emotional reaction which occurs when a job necessity doesn't equal the source or worker's need. Stress is also an external or pressure which influence individual physical aspects and material force [5]. Such external power or pressure might be as a result of conflict and project constraints that the PMs is trying to manage at the same time preventing its effect on project scope and productivity.

[6] defines work related stress as the adverse reaction people have to excessive pressure or other type of demand placed on them. These excessive pressure can emanates from the demands, deadlines, tight margins, knowledge and multi-skills involved in successfully executing the project to its full objectives. HSE carried out a research in this regards in (2004/5) with the finding revealing that about half a million people in the UK experience work-related stress at a level they believe is making them ill while a total of 12.8 million working days were investigated to be dissipated in the process due to stress, depression and anxiety. Stress can also be defined as the harmful physical and emotional responses that occurred when the requirements of a job do not match the capabilities, resources or needs of the workers [7]. Stress is also an experience of discomfort, fear, apprehension, or anxiety that we have when we perceive that we face a threat [8]. Such threats can be identified as risks, conflicts, delays, time and budget which can change or affect the PMs physiological and cognitive behaviors. In a related development [9], [10], [11], traced its negative effects on productivity and job dissatisfaction among workers.

Accordingly [13] defined stress as the force, pressure or strain exerted upon an object or a person that resist these forces and attempt to maintain its original states. To however, remain in that original state, intense or too much stress in a work environment must be avoided or minimized to balance our

safety, health and emotional stability[13]. In the view of [12] stress is seen as any challenge that exceeds the coping abilities of an individuals. Stress is a strain within a person due to the pressure from the environment. Stress occurs as a result of an incongruity between individual and the ambient environment [14]. Stress was also explained as the psychological and physical state that results when the resources of the individual are not sufficient to cope with the demands and pressures of the situation [15].

III. COMMON TYPES OF STRESS IN PROJECT MANAGEMENT

Much have been written and said about stress. Still, project management researchers didn't emphasize on the core types of stress as identified by [16]. The four common types of stress according to Albrecht [16] are:

A. Time stress

[17] states "meeting the deadline of project is one of the responsibilities of project managers. Time stress is a very common type of stress in project management, this type of stress usually occur when the PMs Worries about time, or the lack thereof. The PMs might experience worries about a number of things that have to be done, and the fear that the project activities might not meet the project schedule might bring stress. Hence, you might feel trapped, unhappy, or even hopeless. Common example of time stress includes worrying about deadlines or rushing to avoid lateness for a meeting. Every project have a specific time period in which budget are fixed, project target have to be achieved within a specific time frame which interlinks with scope.

Deviation from anyone will immediately have effect on other schedule which can results in stress. This is the major reasons why PMs tried to fit into too many things at a time, which put them under immense pressure [16]. [18] found that majority of large size project with more than 100 activities fail to meet their deadlines, another was conducted in 1998 with finding showing that 56% of the respondent (mainly project managers) had exceeded the deadlines of their projects. In this case, the project managers have exceeded their normal stress level (when placed yerkes-Dodson curve). [19] believe that time pressure is the prominent sources of stress among project managers. The stress caused by high-level of time pressure can lead to passiveness and avoidance reaction.

B. Anticipatory stress

Anticipatory stress according to [16] describes stress that you experience concerning the future. Sometimes this stress can be focused in a specific event, such as an upcoming presentation that you're going to give. However, anticipatory stress can also be vague and undefined, such as an overall sense of dread about the future, or worry that "*something will go wrong about the future instead of concentrating on what's happening right now*". Most Project managers that experience anticipatory stresses are those that are not sure about themselves, the project or the set budgets[16]

C. Situational stress

Situation stress can be experienced when you are in a scary situation that you have no control over. This could be an emergency. More commonly, however, it's a situation that involves conflict, or a loss of status or acceptance in the eyes of your group. For instance, getting laid off or making major mistakes in front of your team are examples of events that can cause situational stress. Situational stress can also occur when you get caught in situation that you completely failed to anticipate. Another common example is for the PMs to be in a meeting that suddenly results in conflicts where team members begin to exchange words, the automatic response of the PM, is to feel a surge of anxiety, in that situation it may be difficult for the PM to have an input or knowing what to say[16]. It is very important for PM to note that emotional stress such as this are highly contagious, it has serious impact on how the PMs will relate to other team members, [20] pointed that the impact of stress is seen in the area of behaviours, affect(emotions) sensations, imagery, cognitions, interpersonal functioning, and in our physiology.

[21] further explained that articulating the impact of stress in the area of imagery(where one may carry image of hopelessness or failure and in the area of cognitions where we may silently repeat negatives cognitions such as its an awful situation in this project and nothing going to change it. Also when our perception of a situation suggests that a threat rises to a certain level of discomfort (angry customers, critical executive anticipatory project failure) we experience a distinct physiological reaction that hampers our performance [21].

D. Encountered stress

Encountered stress resolves around people. You experience encountered stress when you worry about interacting with certain person or group of people. You may not like them, or you think they're unpredictable. Encountered stress can also occur if your role involves a lot of personal interactions with customers or clients, especially if those groups are in distress. For instance, physicians and social workers have high rates of encountered stress, because the people they work with routinely don't feel well, or are deeply upset[16]. This type of stress also occurs from "contact overload". When you feel overwhelmed or drained from interacting with too many people[16]. Any PMs that lack people's skills will always experience encountered stress.

According to Dan [22] PMs can experience encountered stress in the following situation, unrealistic deadlines, conflicting situations, constant pressure from higher management to perform and meet department/organizations goal, clients expectations, team members expectations and in general project ecosystem, competition with peers and high aspiration of career progression.

IV. CAUSES OF PROJECT MANAGER'S STRESS

[2] gave practical examples of the causes of stress in project management such as "*Imaging the project deadline is 2weeks*

away and there are still some critical issues to be resolved. To make it worse, one of your team members has been hospitalized, customers is unhappy and management is requesting for a daily review he concludes" with the illustration of [2] you can imagine the stress the PM will be going through at that moment of extreme pressure. Therefore, there are numerous causes of stress in project management and our daily lives which make it difficult to point out just one or two causes of stress. But the PMs must understand what causes stress if we want to reduce stress in our working days. [1] believe that the experience of stress is subjective, whereas the stressors causing it are objective. In 2006, CIOB conducted a work stress survey and the finding reveals that 68.2% of the respondent had suffered from stress, anxiety or depression, the research reveals the main causes as lack of feedback, poor communication, inadequate staffing, too much work, ambitious deadlines, pressure and conflicting demands.

The increasing significance of work stress was recognized in the European commission's strategy on health and safety at work 2002-2006 which identify psychological issues as emerging causes of occupational health and safety priority risk [23]. [24],[26], explained that work that is simultaneously high in demands and low in control produces the most stressful responses and is most damaging to health(job demand control(JDC).

[27] identify inadequacy of information flow, onerous paperwork and excessive workload as the top three causes of stress (stressor) among construction site managers. The increasingly complex and fast paced activities in today's construction industry as fuel the potential for a more stressful situation. The heath safety executives [6] reveals that stress related causes has accounted for about £12 billion per annum involving up to 442,000 people. Similarly, the American institute of stress(AIS) estimates the cost of stress to the US economy at $300 billion per annum from a combination of accidents, absenteeism, employer turnover, diminished productivity, direct medical, legal, and insurance costs, workers compensation awards as well as federal employees liability Act(FELA).

Stress can also occur when project fails to meet its objectives(failure), at that point, tensions begin to rise between stakeholders and project managers, team members begins to worry about compensation, performance review e.t.c. According to [28] when dealing with difficult individuals, arguments and unexpected setback at the wrong time, project mangers must not show stress. Rather, they should communicate the importance of straying focused, applying documented processes, and maintain perspectives. The Canadian statistics in 2010 found that 62% of highly stressed workers described work as their main source of stress. The report also suggests that stress is a known risk factor for heart disease. Stress levels also impact weight gain and weight loss.

Another primary factors responsible for stress in project management is for the PMs to be working on quixotic deadlines, instead of the PMs to discuss rescheduling or prorogue with the project owners, they prefers to stress themselves even though they understand that the deadlines are unrealistic, that can affect the quality of work and project delivery. Another dominant sources of stress in project management is conflicts. The conflicts can be between the PMs and project owner or the PM and team members or the PM and some stakeholders. Trying to convince the project owners or team members towards your own perspective can bring a whole lot stress. Some will say if the PM cannot show leadership, he should leave the project. Though correct but technically not easy.

When stress gets to a point where a person body system completely breakdown, the recovery process is not always easy. It is most times advisable for PMs to manage work related stress before its get beyond a tractable control. The result of this carelessness is "Anxieties" which can results into poor communication, memory loss, depression and tiredness. It can also result into poor organization and decision making. Another results of unhealthy behavior is "Apathetic/bored" which can result to hypersensitive criticism but can still be managed when in early stage. In summary, [2] summarizes the common sources of stress among project managers, which are:

- Unrealistic timeline
- Working in a matrix system which PMs does not have full control of the resources
- Lack of resources-human and/ or equipment
- Proliferation of virtual teams and cross cultural influences
- Inter-group conflict in organization
- Project environment

In addition to contemporary literatures, the causes/sources of stress were also categorized into five(5) principal groups, which are (1) personal related stress (2) Relationship related stress (3) Work and time related stress (4) Organizational policy and Position related stress and (5) Situation/environmentally related sources of stress

TABLE I.   SOURCES OF PROJECT MANAGER'S STRESS

Working characteristics	Stressor
Organizational formation and culture	Poor communication, task environment, problem solving
Participation	Low participation in decision making
Career development and job status	Career status, and job insecurity or residency
Role in organization	Role ambiguity, and conflict in role assignment and performance of task
Job content	U-defined work, high uncertainty in jib process, lack of variety, fragmentation of work, under-utilization of skills, and physical constraint
Workload and workplace	Work over-load, work under load, time pressure and deadlines, lack of control over pacing of work
Work time	Inflexible work schedule, unpredictable hours of work, long hours of work
Interpersonal relationship at work	Social or physical isolation, lack of support from other staff, conflict among staff, poor relationship with supervisors and managers
Preparation and training	Inadequate preparation for dealing with more difficult aspect of job, concern about technical knowledge and skill
Other problem	Lack of resources and staff, shortages, poor working

		environment

a. *Source: Sutherland and Davidson (1989), Ng etal (2009), wahab (2010 cited in Ibem etal (2011)*

V. RECOGNIZING STRESS

Stress are said to have varieties of observable symptoms but PMs recognizing that he or she is under stress is highly germane to the study. [29] states "*We know many PMs with prematurely gray hair and a serious addition to antacid pills, if you are the only one responsible for results and the only one who's aware that the results might not be what everyone(including the customer) is hoping for, you'll be stressed*". Most times when PMs Feel overwhelmed, they ignored the warning signs and insist that they are not under stress but this most times lead to a bigger health problem interfering with job performance and satisfaction[29].

Previous report have shown that some stress are unforeseen or planned for such as personal stress which can arises due to serious illness of a loved one, a family member or team members, this can take priority attention in the projects. Research by Franklin institute explained that stress and the over secretion of hormones related to the body most times attempt to deal with stress but negatively affects the brain function. Emotional liability can also be recognized as stress due to a sharp reaction like sadness, happiness or anger. Another stress PMs often ignored is presenteeism. Presenteeism is a term used to describe employees who turn up for work despite suffering some form of ill-health; they are usually driven by worries about job security, performance targets, letting people down e.t.c. such constitutes mental distress which means the PMs might be physically present at the project but cannot achieve its full efficiency. Their productivity fails and there is an increased risk of errors and accidents resulting from lack of concentration.

[30] suggest that if employee has a considerable knowledge in stress at workplace and strives to handle them, it will simultaneously reduce employee rate of absenteeism and sick leave, as a consequence of stress. [31] feels that the employees that experience stress will generally feel lethargic to go to workplace and perform everyday tasks. Lack of concentration, depression, tenseness or ever paranoid was classified as psychological symptoms by [1]. The following shows the common sign of stress according to their categories in project management.

TABLE II.   SYMPHTOMS OF STRESS

Emotional symptom	Mental	Changes from your normal behavior
Negative or depressive feeling	Confusion, Indecision	Changes in eating Habits
Disappointment with yourself	Cant concentrate	Increased smoking, drinking or drug taking to cope
Increased emotional reaction-more tearful or sensitive or aggressive	Poor memory	Mood swings affecting your behavior
Loneliness, withdraw		Changes in sleep patterns
Loss of motivation		Twitchy, nervous behavior

commitment and confidence		
Mood swings(Non behavioral)		Changes in attendance such as coming late or taking wrong time off

Signs of stress among team members in a project	
Health and Safety Executives (HSE) (team members)	American Institute of Stress(AIS) (project mangers)
Disputes and disaffection within the group	Inability to focus or concentrate on a customer problem or workplace situation
Increase in staff turnover	Irritability in dealing with others in workplace
Increase in complaints and grievances	Excessive fatigue which causes you to day dream or rod off during the day
Increase sickness absence	Intestinal irritation that can affect your appetite or cause you to be absent from work
Increase reports of stress	Tardiness or absenteeism
Poor performance	Being argument active or aggressive with customer
Customer dissatisfaction or complaints	Nail biting or other Nervous habits(e.g. fidgeting, sighing)
	Poor attitudes which manifest itself in phases like "who cares", its not my problem, whatever
	Insomnia
	Rapid or irregular heartbeat
	Feeling of depression and being under appreciated
	Pains in the stomach

VI   FACTORS AFFECTING STRESS IN PROJECT MANAGEMENT

According to the American institute of stress, stress can be categorized into the following factors

- Environmental factors
- Job factors
- Personnel factors

A. ENVIRONMENTAL FACTOR

I. People: People can be a major source of stress. This is because you cannot control other people and how they behave. Another person's behaviour style, emotional and mental state, and willingness to communicate appropriately and effectively may make it stressful for project manager's job [7].

II. Physical factor: Physical factors such as noise, odours, cold or heat could affect you more than they affect others [7]. The PMs Ability to perform at peak efficiency may be inhibited by these factors

III. Occupational Hazard: Hazard that causes you to be concerned for your safety and that of other team members can be stressful. Such stressor (things that causes stress) are dangerous people or situations; heavy equipment or machinery; flammable's, caustics or heavy lifting equipment [7].
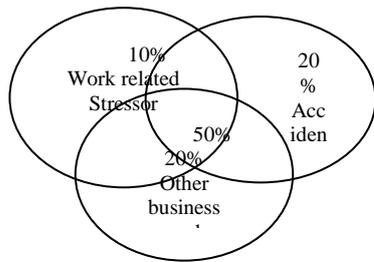
Source: Lardiner and Wilson (2003)

IV. Non-Ergonomic situation: Physical stress is created environments in which chairs, tables, computer equipment, and other tools do not conform with industry standards related to employee protection, comfort, and safety[7]

V. Organizational element: The organization you work for or projects environment can play a big role in increasing or decreasing your stress level. Especially if the organization or project is undergoing various restructuring or change in structure, product, technology etc other type of job and organizational stressors, includes a high level of job demands, too much work, insufficient social support and the composition of the crew men [32].

B. JOB FACTORS

I. Job structures: Organizational structures that requires you to work various shift/ or overtime in other to complete assigned task can be stressful and can lead to physical and mental side effect. Also whether you work in a hierarchical or team based environment can have an input

II. Job security: Stress can cause poor job performance. Employees often go through a period of insecurity when major changes occur within an organization. Some of their insecurity can be attributed to the behavioural style; it can also result from a lack of inadequate and effective communication from upper management[33].

III. Unreasonable goals: Goals are part of evaluating job performance in most projects or organizations. There are personal and organizational goals. You will typically be held accountable for personal goals that can ultimately influence the attainment of the goals of the projects or organization[7]. Unfortunately, many supervisors and Project leaders set goals with little or no personal input from their team members or employees who have to meet them. Employees are held accountable for unrealistic production goals, and in some instance their results are publicly displayed. This practice can cause mental upset among team members, as well as low morale indignation, and frustration.

IV. Conflicting demands: Most project managers have multiple responsibilities. These responsibilities may sometimes conflict each other. Although most PM triumph and accomplish their tasks, there may be times when they may not achieve the degree of success that is acceptable and

desired. This is often because most Project Manager's need and efforts to provide quality service are seldom hindered by policies and procedures or by factors beyond their control.

V. Repetitive task: Many positions requires employees or team members to do repetitive task that provide little or no opportunities for imitative or change routine such responsibilities can sometimes lead to boredom or to a lackadaisical attitude toward job performance and low morale [7].

C. PERSONAL FACTORS

Personal factors such as relationship (as explained earlier), physical condition, financial problems and overworking can results to stress

VI. COPING STRATEGIES FOR PM'S IN A STRESSFUL SITUATION

According to [34], a coping refer to the thoughts and actions we use to deal with a threatening situation such as stress. The study centre continued by saying a stressful situation may be considered a threat for you but not necessarily to another. CSHS classified two different coping strategies as (1) problem – focused strategy and (2) emotional focused strategies while [8] classified its coping approaches as (1) positive psychology and (2) cognitive behaviour strategies.

I. Positive psychology: Positive psychology according to [21] involves looking at a demanding situation with a realistic eyes, but still trying to finds a genuinely positive aspect in the "mess" that we hang into as a means of crating a more positive or less stressfully positive. This approach help one to be motivated to address the problem situation and this motivation increases our ability to tap into our cognitive, problem solving abilities. [8] illustrate the following as a positive psychological situation.

"A project manager has disruptive team members, who frequently criticize her during team meetings. This criticism has been personally painful, with the project manager withdrawing during meetings as a way of handling the stress. Using positive psychology, the project manager is encouraged to find one positive aspect of this situation that she could hang unto as a way of handling stress when dealing with the team members. Her focus, then, is to make the task one of fine tuning her repertoire of assertive behaviour as compare to wondering on how to survive another attack from this person"

II. Cognitive behaviour strategies: [21] explains cognitive behavioural strategies on a theory that states how we think, impacts, feel which impact how we react. We are trying to modify how we think about a stressful situation in order to feel differently about it, and ultimately to act differently towards the stress situation

III. Problem – focused strategy: [34] explains this strategy as the method of using active ways to directly tackle the

situation that caused the stress; you must concentrate in the problem

IV. Emotional – focused strategy: Emotional focused coping strategy are used to handle feeling of distress, rather than the actual problem you focus on your emotions [34]

VII. COPING STRATEGIES FOR TIME STRESS, ANTICIPATORY, SITUATIONAL AND ENCOUNTER STRESS

[16] opined that to cope with stress, you have to learn good time management skills, make sure that you are devoting enough time to your important priorities. Your important tasks are usually the one that will help you reach your goals. You can cope with anticipatory stress (since it is a future based stress) by recognizing that the event you are dreading doesn't have to play out as you imagine. It can also be overcome by meditation, which will help you focus and the ability to concentrate on what's happening right now, rather than on an imagined future.

Overcoming fear of failure is also an anticipatory stress that can be overcome by creating a contingency plans and analyzing all the possible outcomes which will give you the idea of the future. Situational stress can be address when you are self aware (which means you recognize the automatic physical and emotional signals that your body send out when you're under pressure) while project mangers can cope with ncounter stress when you develop greater emotional intelligence(that is, the ability to recognized emotions, wants, and need of yourself or team members).

Empathy is another method of coping with encounter stress. Empathy is a valuable skill for coping with encounter stress because it allows you to see situation from the other person's perspective. This gives you greater understanding and helps you to structure your communications so that you address the other person's feeling, wants and meets another coping strategies. For time and encounter stress according to [35], PMs should create a balanced schedule, avoid commitment into too many tasks, starting day early, prioritizing tasks, delegating responsibilities and must be willing to compromise. Self awareness, self management, social awareness and relationship management are also some coping strategies for encounter stress.

OUTLOOK

The study opens up opportunities for further research. First, future research should endeavour to use quantitative approach to widen the sample to incorporate other professionals in the construction industry. Though, the research is applicable to any other professionals in the construction industry and beyond. finally, the construction industry in Nigeria and other professional bodies related to construction and project management should endeavour to create more openness in acknowledging and addressing the problem of occupational stress because most professionals and workers are prone to a stressful situation daily due to the economic situation and the competitive environment which

makes a qualitative research in this area highly demanding with need for more useful coping strategies. Awareness and possibilities of a training programme at each monthly professional bodies meeting will also be of benefits in this regard.

CONCLUSION

A PM is responsible for managing and undertaking projects, even though, a project is a temporary endeavors, it can still bring a permanent mental breakdown if not properly managed. PM's stresses are somewhat inevitable. But it can obviously be curtailed. The task of a PM in managing stress in this regards become complex because of the responsibility of managing is own stress and that of is subordinates, and also the responsibilities of dealing with tight deadlines, demanding stakeholders and complex task while leading a team. PM's are however advised to moderate their stress level and ensure that their expectations align with reality. PM does also need high levels of cognitive performance when faced with a stressful situation in other to maximize productivity

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