Occupational Fatalism as Predictor of Risk Behavior Patterns of Workers in High Risk Work Settings

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Abstract   The role of belief systems in occupational health and safety cannot be overemphasized particularly in culturally addicted work settings characterized by implicit and explicit fatalistic practices. Although individual factors affect at-risk behaviors, the paper argues that belief systems are capable of determining risk propensity in face of workplace hazards. The study examined fatalistic beliefs at work as predictors of risk perception and at-risk health patterns in a high risk work context. Sample constituted 130 fishing operators (35.7% females, 64.3% males) from Bambalang, North West Cameroon. An instrument with aggregate alpha, 0.73 was used for data gathering, and data were analyzed using descriptive and inferential statistics. The core component of protective medallion, and cleansing ritual determined risk perception, but appeasement of gods failed to predict variation in the outcome measure. Despite insignificant results recorded for appeasement, the overall component of fatalism, predicted risk perception of operators. Furthermore, appeasement of gods and protective medallion influenced at-risk health patterns of operators. Although cleansing ritual failed to determine health risk patterns, overall fatalism significantly accounted for variation in at-risk health patterns. Results have been discussed within the context of belief systems and occupational health management in traditional occupations and perspectives on reinforcing risk awareness and education for workers exposed to health and safety hazards.

Keywords   Workplace Fatalism, Risk behavior patterns, Health, Safety, High risk occupation

1. Introduction

In occupational psychology, interest in culture, risk perception and health practices of workers has become an important topic to academics, health experts and policy makers. Although debates have been so polarized in the domain, behavioral analysis has not been undermined (Fomba, 2009; Ngueutsa and Kouabenan, 2017; Sjöberg, Bjørg-Elin and Torbjørn, 2004), and much has been contributed to the domain of risk psychology at work. At-risk behavior is perceived as the intentional or unintentional exposure to the possibility of injury or loss (Haan, Kuipers, Kuerten, Laar, Olivier and Verster (2011), and hazardous expressions are usually determined by individual, environmental and situational factors. Recently, there has been much progress in improving safety and health of workers in different production systems (Kiani and Khodabakhsh; 2013; Kouabenan, 2009), despite timid responses in the domain of indigenous occupations. Recognizing that health promotion behaviors are often simple to execute and inexpensive to implement, many individuals instead resist adopting safe behaviors that can

promote their wellbeing (Cohn, Esparza de Villar and Armando, 2015). This may at times be attributed to contextual factors such as belief systems or fatalism, which is a belief of lack of self-control in preference of luck, divine intervention or destiny. Such fatalistic attitude is based on the understanding that fate leaves nothing that can be done, but accepting the life situation as predestined (Silvia, Oliveira and Bernado, 2020). In the African context, causes of unfortunate events are often derived from forces outside the control of individuals, and this has currently attracted attention in the domain of workplace health and safety. This justifies current research interest in risk-taking behavior and determinants in several distinct content areas as a content-specific variable (Weber, Blais and Betz, 2002). Consequently, the causal explanation process used to understand the world has been positioned at the heart of any health behavior (Vaughn, Farrah and Baker, 2009), and this is the case with other behavior attributions. This belief system holds that everything has an appointed outcome which cannot be altered by effort or foreknowledge portraying a sense of helplessness that a person may feel with regard to proactively modifying his or her future (Bernard, Dercon and Tafesse, 2011; Fomba, Forgako and Kinge, 2019). Furthermore, fatalism has been shown to play a significant role in determining a vast range of individual behaviors including saving decisions, occupational choices, health screening behaviors and natural disaster preparedness

(Ruiu, 2012). Today, the effects of fatalistic beliefs are gathering more strength in this causal explanation and used to explain health and safety related behaviors in different occupational settings. This justifies the use of cultural theory to understand the social construction of risk, and also contribute to contemporary debates on risk (Tansey and O'riordan, 1999). Despite individuals' sense of personal control over health (Keely, Wright and Condit, 2009), the present orientation argues that occupational fatalism could be highly responsible for risk perception and risky health patterns of workers, thereby affecting resistance or adherence to prevention behaviors in different work operations.

Another factor in health and safety is risk perception, which to an extent is determined by cultural values of the workers. People at all levels at work have representations of risks, why they exist and ideas about what causes accidents and how to prevent them (Kouabenan, 2009). In this respect, Vaughn et al. (2009) explained that perceptions of good and bad health and the causes of illness are formed in a cultural context since what is acceptable in one culture may not be acceptable in another. This has implications on occupational health and safety, and justifies the analysis of at-risk behaviors as an outcome measure of fatalistic beliefs. It should be noted that fatalistic beliefs are generally shaped by stable culture, social norms, conventions and moral values in given contexts. For instance, Ruiu (2013), observed that religious beliefs and their interactions with institutional framework seem to be an important element determining fatalistic tendencies with little differences across faiths. Despite the fact that this is highly prevalent in public life, spirituality is now a domain of interest in work and organizational processes.

African traditional religion is an aspect of fatalistic tendencies in society, and manifestations have been extended to both traditional and modern work contexts within the context of workplace spirituality, which is a core dimension of fatalistic beliefs. The basic notion of occupational fatalism holds that workplace accidents cannot be prevented even if all precautions for occupational health and safety are taken into consideration (Üngüren, 2018). Presently, fatalism as a core value has unconsciously dictated on varying operations in economics and sociology (Ruiu, 2012; Ruiu, 2013), health education (Vaughn et al., 2009), perception and burnout (Ngueutsa & Kouabenan, 2017; Üngüren, 2018), workers motivation (Fomba et al., 2019), safety risks and accidents (Kouabenan, 1998; Kouabenan 2009; Ngueutsa & Kouabenan, 2017). People of diverse cultural backgrounds often make different attributions to illness, health, disease, symptoms and treatment (Vaughn, Farrah & Baker, 2009), and this determines their risk behavior patterns with regards to existing hazards. For example, workers in the Western world generally attribute causes of misfortune at work to individual responsibility while those in the majority world generally perceive social and supernatural causes as determinants of occupational risk hazards. This has attracted behavioral scientists who have examined the association between fatalistic beliefs and factors affecting failure to adapt to health promoting behaviors such as seat belt use and adherence to prescribed medical regimens (Cohen et al., 2015). From such initiatives it is clear that the social psychological dimension of health and safety risk behaviors cannot be undermined in any sustainable venture with regards to management, performance and productivity. The present paper addresses aspects of cultural values and how they influence risk perception and hazardous health patterns of workers. It is also critical on practices and how ensuing lessons can empower occupational health and safety specialist in initiating behavioral change strategies. With the understanding that risk perception and concern about environmental issues are socially and culturally framed (Rippl, 2002), the study has identified the cultural theory of risk perception (Douglas, 1970; Douglas and Wildavsky, 1982) as an appropriate analytical framework.

It has been recognized that people's preference for risky options is assumed to reflect a tradeoff between an option's expected benefit, usually equated to expected value, and its riskiness is perceived as a variable that can differ between individuals and as a function of content and context (Weber, Blais & Betz, 2002). Despite the fact that individual factors have a say in risk behavior and analysis, many debates and studies carried out on risk taking behaviors at work have equally used belief systems as an explanatory framework. This shows the comfortable place of culture in behavioral safety in everyday work life. Culture represents a natural and unquestionable way of acting, and serves to elaborate a particular version of risk, danger, and security with explanatory schemes designed to account for accidents and to explain how and why they happen (Kouabenan, 1998). Although our interest is on indigenous work settings, modern workplaces are not void of such fatalistic beliefs. It is common observation in modern enterprises to find mishaps at work being associated with luck, back luck, misfortune, mystical powers and prayers because such occurrences are linked to supernatural sources with extraordinary powers. Despite the fact that fatalism could be culturally transmitted from one generation to the next, there are differences regarding how fatalism is conceived within different cultures (Ruiu, 2012). Moreover, mystical and religious practices which are destined to prevent or protect people against risk and accidents such as prayers, visits to fortune tellers or marabouts (witch doctors), sacrifices and protective medallions are very common (Kouabenan, 1998). Although the motives underlying such superstitious beliefs are many, the present context advances that belief systems are designed to have some extraordinary powers over difficult or challenging situations, prevent undesired occurrences, appease the supernatural or restore some losses. In this vein, Kouabenan (1998) clarified that one of the possible sources of bias in judgments concerning risk and accidents may be found in the culture which defines the system of beliefs, values, representation and experience shared by members.

Despite the fact that workplace fatalism has been perceived as a determinant of risk perception and risk

propensity, this has not received enough scientific attention in traditional occupations. This shows the lack of interest by scholars and researchers and this is justified by the fact that operators in the traditional sector remain exposed to physical and mental risk factors that affect their health, safety and effective performance. This may be due to the abstractions regarding the nature of the concept that appears philosophical and mystical. But it should be recalled that fatalism in a clearer form is characterized by lack of proactive and systematic effort to strive for a better life, and the implied acceptance of desperate and destitute circumstances (Bernard et al., 2011). The presence of a religion with a low transformative potential combined with the existence of bad institutions in turn generate fatalistic beliefs and this results in a society that is difficult to endogenously implement reforms because religion may repress new ideas (Ruiu, 2013). From this standpoint, the notion of culture comes in purposefully and plays a great role in emotional and behavioral expressions of local workers. In order to provide support for the above assertions, an empirical study based on the survey of indigenous fishing operators in a culturally addicted milieu in North West Cameroon is necessary to ascertain workplace fatalism (traditional religious values) in risk behavior. This stands to augment the body of knowledge in occupational fatalism in local context, and results could be used by stakeholders to attenuate risk and improve on the state of health and safety of the operators. Despite the recognition of individual psychological factors, the paper contends that workplace health and safety behavior patterns depend on fatalistic beliefs that are socio-cultural categories of a given locale.

Orientation of the study

Despite the fact that risks have generally been categorized in terms of financial, social, legal and physical (Haan et al., 2011), the present discourse takes a psychological route to explore at-risk behaviors of fishing operators in a high risk occupation within the context of belief systems. This attitude can be present in all the domains of life, and obviously visible in the work domain (Silvia et al., 2020), and required appropriate assessment. Although the concept of fatalism nevertheless remains unclear whether it is a unidimensional construct or whether it represents a larger, multidimensional phenomenon (Niederdeppe & Levy, 2007), the present study positions fatalism as a multidimensional construct comprising core components (appeasement of gods, protective medallion and cleansing rituals) and an overall component. The study draws from Bernard et al. (2011) that fatalism is the equivalence of inability to invest in one's well-being for a better tomorrow, and that everything has an appointed outcome which cannot be altered by effort in proactively modifying the future. In the present situation workers appear to have developed inertia, and find it difficult to invest necessary cognitions and behaviors that can facilitate effective health and safety practices. Furthermore, the interest of the paper is not to verify the reality of such belief systems; whether they work or not, but rather to examine if fatalism as a psycho-cultural property has any effect on risk propensity. The paper strongly proposes that in order to understand factors in risk behavior the socio-cultural and historical context of the people should be given the necessary attention. These are values, knowledge, attitudes, perceptions and practices that are recognized by a given groups of workers as capable of strengthening them to withstand occupational hazards, and such belief systems are often inbuilt in the way of life of the people as adaptive measures. It would be understood that customs, beliefs, religious or animist practices renew themselves from generation to generation and while some of these practices tend to understate risk, others on the contrary tend toward dramatization (Kouabenan, 1998). On this note, the study suggests that fatalistic beliefs of workers in a culturally addicted workplace may affect risky tendencies, and justifies the exploration of fatalistic beliefs as determinants of at risk behaviors. In the process, the cultural theory of risk perception has been isolated, since Tansey & O'riordan (1999) asserted that health-related risk are influenced by interactional contexts in which judgments are made.

Prevalence of fatalism at work

The high risk work setting is found in Bambalang community, a fishing village in Ndop Sub-Division, North West Cameroon. The community has a vast water body called the Lake Bambalang, and this lake has made the community to be recognized in artisanal fishing carried out predominantly by locals. Their fishing activities have been interwoven with their cultural ecology and demonstrated by traditional beliefs through fatalistic practices performed before, during and after fishing seasons (Fomba et al., 2019). These practices are perceived as preventive strategies and carried out through sacrifices to appease the gods of the community not excluding the use of protective medallions by operators. Due to strong belief in theses protective cultural technologies conventional preventive measures are not often respected and most operators do use available protective gears (Fomba et al., 2019; Kouabenan, 2009). Most fishers adhere to beliefs in traditional African deities, and this is observed with those who believe in modern and traditional African religion. In this community, water is a key to their survival and they have maintained an enviable link with the lake as a source of their identity, survival and ritual practices are performed to protect the community and sustainable livelihood. Within the framework of some fishing projects, the Government of Cameroon has provided training and fishing gears for effective use in their occupations. Unfortunately, operators still use indigenous technologies such as talisman, beats, sacrifices and songs to calm storm, protect themselves and make a good catch, in lieu of conventional technologies like modern Personal Protective Equipment (PPE). This appears to draw from wider community belief systems considering that illnesses or accidents are attributed to superstitious causes and that misfortunes are caused by magic, evil spirits, destiny, witchcraft or conditions predetermined by the gods. Since

the workers generally attribute misfortunes to different types of cosmic forces, they equally seek for care, treatment, and protection from traditional practitioners or village priests who often emphasize on preventive strategies through sacrifices, protective medallions or songs to calm the spirits of the water and gods of the community.

The present debate on risk patterns of fishing operators raises a lot of problems when it concerns health and safety of operators. It has been observed that bias in judgment derived from cultural values influence risk perception at individual and collective levels (Kouabenan, 1998). This may be possible with the fishers as object perceptions tend to be influenced by held beliefs of the subjects. The interest is whether fatalistic tendencies of fishing operators can affect perception of health and risk hazards. Considering that fatalistic beliefs are associated with the perception of risk (Ngueutsa, 2017), the issue at stake is whether appeasement of gods, use of protective medallions and ritual cleansing will have any effect on risk perception in the present context. Since fishers appear to use psycho-spiritual technologies drawn from supernatural forces to protect themselves and appease the water for a good catch (Fomba et al., 2019), the question is whether proactive fatalistic practices can reduce prevailing sense of insecurity and facilitate risky perceptions and hazardous health patterns. Certain individuals try to find means (often irrational) to reduce dissonance, protect themselves, and feel safe through mystical and religious practices(Fomba et al., 2019; Kouabenan, 1998), and such beliefs are associated with increased levels of non-compliance (Cohen et al., 2015). With the recognition that risk decisions in life involve a balance between risks and anticipated reward (Haan et al., 2011), the interest is to understand health behaviors of operators within the context of fatalism. Consequently, the present investigations positions psycho-spiritual technologies as predictors of hazard perception and risky health patterns.

2. Literature review

Conceptualization

This section gives a relevant direction to the concepts and review related literature pertaining to the hypothesized relationships. Culture has been acknowledged in all aspects as an important factor in health and safety behaviors of people in life and at work. Hofstede (1993) defined culture as the collective programming of the mind that distinguishes the members of one group or category of people from one another. This implies that culture is a cognitive property of the subject, within and not without. To Kouabenan (2009), culture is a system of beliefs, values, representations, and shared experiences among the members of a given social group. Ruiu (2012) further identified the salient points of culture: (1) A collective not individual attribute; (2) Not directly visible but manifested through behaviors; (3) Common to some but not to all people; (4) Slow moving being an inheritance that fathers leave to sons. These

elements are found in the thinking and practices of fishing operators of Bamabalang. This is relevant with the analysis of hazard perception and risky patterns of fishing operators in high risk environment considering that occupational risk behaviors appear to be drawn from societal belief systems.

Belief systems are important dimensions of culture and this is the case with fatalistic beliefs held by a group of people. Although fatalism research happens in a variety of disciplines with variety of theoretical orientations, its definitions and role in health behaviors is somewhat unclear (Keely et al, 2009). Anyway, there have been some frantic attempts at definitions and operationalization. Ruiu (2012) defines fatalism as people's propensity to believe that their destinies are ruled by an unseen power, fate, rather than by their will. Fatalism portrays a life style based only on the present, where there is no planning ahead or thinking about the future and describes a state wherein people are reduced to living day-to-day with no hope for the future (Bernard et al., 2011). In this respect, fatalistic individuals generally think that they have no control over events and that they are controlled by external factors which they cannot influence (Kouabenan, 1998). In another perspective fatalism is the subset of deterministic attitudes that project pessimistic rather than optimistic futures (Keely et al., 2009), and ignores the role of will in taking responsibility for behaviors and consequences of those behaviors (Üngüren, 2018). The concept has some bearing on locus of control, although external locus of control is of interest since actions appear to be determined by external forces. This is the case with fishing operators who appear to depend on rituals and protective charms as guarantor of their security, while indirectly promoting risk perceptions and risky health patterns at work.

Risk is any potential hazard than can cause injury to a worker, and risk perception is the way meaning is given to information about the potential hazard for necessary response. With more precision, risk is a kind of danger with uncertain outcome. Risk perception is the subjective assessment of the probability of a specified type of accident happening and concern with the consequences, which includes evaluations of the probability as well as the consequences of a negative outcome (Sjöberg et al., 2004). This is understood as representations and beliefs about hazards held by employers or operators, which inevitably influence the general level of safety in an organization and attitudes about prevention measures (Kouabenan, 2009). There is no doubt that cultural representations are central to risk evaluation and interpretation, and this is the position of the current study, designed to understand risk behaviors of workers.

Health risk pattern refers to hazardous behavioral patterns employed by workers, and which are likely to jeopardize their health in a way. Risk-taking behavior can be functional, necessary, and appropriate in some situations, but can also be dangerous and inappropriate (Haan et al., 2011). Such hazardous patterns expose workers to psychological distress and physical health problems such as diseases and accidents,

and place the subject in a state of uncertainty. Uncertainty is closely related to risk and in many theories of behavior, psychological uncertainty is assumed to be an important mediator of human responses in situations with unknown outcomes (Sjöberg et al., 2004). Understand theories associated with risk behaviors are critical, and the cultural theory of risk perception has been isolated as relevant in explaining risk behaviors in high risk context.

The cultural theory

The field of risk research is currently dominated by two approaches, the psychometric paradigm, which is rooted in psychology and decision theory with dominant cognitive pressure on risk perception, and the Cultural Theory of risk perception by Douglas and Wildavsky (1982). Although many theoretical frameworks have been deployed to explain risk behaviors, the cultural theory (Douglas, 1970; Douglas and Wildavsky, 1982) has emerged as one of the main paradigms in the social analysis of risk, and this has been used as a framework for the present analysis. The theory advocates the role of cultural ways of life in determining what states of affairs individuals see as worthy of taking risks or in responding to any form of danger. This is consistent with the present study, where people have internalized their cultural values as needs for adaptability, and these values influence the way they perceive and their behavior in terms of risk at work. Whereas other theories stress economic and cognitive influences, Cultural Theory asserts that worldviews are important to responses (perceptions and behaviors) to risk situations, and this depends on values of people in a given risk setting. Despite the recognition that cultural theory accepts the uniqueness of subjective individual positions, it predicts a limited number of cultural biases in the collective representations of dangers (Tansey & O'riordan, 1999). Biases abound due to the fact that perception of risk cannot be objective since it depends on social and cultural dictates. Moreover, risks perceived and responded to from the perspective of held values and such values are in the comfort zones of the subjects who will normally resists objective perceptions simply because they are not consistent with prior beliefs. It should be noted that cultural theory distinguishes between acceptable and unacceptable risks. The former does not pose any threat to cultural values, while the later does. What is disturbing with the proposition of the theory is that the acceptable risk may be that which is objectively unacceptable to others, and this will instead lead to culture shock and ensuing risk or adherence behaviors. Consequently workers will not deploy the behavior since it goes against the norms of conformity, solidarity and respect of statutory provisions of culture. This concurs with the theory that the perception of risk is produced and upheld by social structures to serve and maintain available structures. This is the way of life of the subjects, and each corresponds to particular structure and corresponding view of risk. It therefore means that individual cognitions are rooted in social and cultural systems that they identify with regardless of setting (Fomba,

2009). Risks are very often the result of a social construction and thus depend on the society's experiences, needs and level of development, changing ways of thinking, the evolution of knowledge and technological progress (Kouabenan, 2009). Therefore, in terms of changing perceptions towards risk taking ventures or acceptable risks in occupational settings, socio-cultural values that are prone to biases must be taken into consideration. Despite individual beliefs about risk, the present scenario has been gripped by cultural values that probably affect risk perception and health risk behaviors of fishers, and this is drawn from wider community belief systems.

Evidence of empirical works

Some investigations have been realized to determine the relationship between fatalism and risk perceptions of workers. In one of the early studies with Ivorian participants, Kouabenan (1998) observed that beliefs and social practices in the likes of religious rites, sacrifices, rituals, parascientific consultations, mystical and initiation practices influence the perception of risk as well as the causal explanation that one may give for accidents. Further analysis unveiled that fatalistic individuals had limited knowledge of risks and accidents, and since they cannot avoid the inevitable from happening, certain rites could be performed to avoid the danger. With a sample of road users, Ngueutsa & Kouabenan (2017) found that participants with higher levels of fatalistic beliefs perceived dangerous traffic situations as less risky and reported less safe behaviors. It could be explained that perceived risk partially mediates the association between fatalistic beliefs and reported safe behaviors. The results of the above studies in African context are consistent, suggesting that workplace fatalism could be attributed to belief systems and perceptions of the wider society. With a sample of Turkish employees, Üngüren (2018) found that fatalistic beliefs affected people's attitudes toward occupational accidents. Although the study was on attitude, the concept has very close leaning with perception, and it is likely that results of fatalistic beliefs could influence perceptions in the sector.

Although individual and situational factors could be responsible for health risk behaviors some studies have subjected cultural beliefs of workers to examination. In one of the rare studies with low income earners in America, Keely et al. (2009) found that fatalistic talk was a functional mechanism to cope with certain health situations in times of difficulties. But it should be noted that majority of participants endorsed both genetics and behavior as causes of health outcomes instead of attributions to socio-cultural factors. In a related investigation on a national scale, Kouabenan (2009) reported that beliefs systems greatly influence safety-related protective behaviors in trade or occupations. This means that such fatalism is not limited to organizational settings but as well found with people doing business as a whole. In another survey, Bernard et al. (2011) showed evidence of fatalistic beliefs among a substantial group of rural households, as well as indicators consistent

with narrow aspirations gap and low self-efficacy among Ethiopians. Although the study is not on risk perception and health patterns, it portrays the role of belief systems in sustainable livelihood drives in different sectors. Using a sample of taxi drivers Mahembe and Samuel (2016) reported that workers tend to link their religious and spiritual beliefs with road accidents and destiny, particularly with individuals who are sociable, gregarious and assertive. The study further demonstrates that fatalistic beliefs influence drivers' behavior, and this implies the critical role of belief systems in health patterns of workers. In a meta-analysis Cohen et al. (2015) found higher levels of fatalism associated with higher levels of health threatening behavior and non-compliance with health promoting activities. It was also unveiled that participants who did not engage in health promoting behaviours held significantly more fatalistic beliefs than participants who engaged in health promoting behaviors. The results suggest that fatalism-health behavior relationship may be smaller than previously suggested.

In another study, D'Orlando et al. (2010) reported the effect of fatalism on choice behaviors with regards to protection given to workers, suggesting that beliefs can determine health behaviors of workers. Using inland fishers, Fomba et al., (2019) reported fatalistic practices as determinants of occupational motivation of fishers, and results suggested that though cultural technologies are seemingly invisible, both physical and symbolic properties of belief systems are capable of achievement-driven behaviors. Although many investigations have found significant relationships between fatalism and health patterns of workers, Keely et al. (2009) found that an overwhelming majority of participants endorsed genetics and behavior as causes of disease instead of socio-cultural attributions. This is one of the rare outcomes on the power of belief systems, and perhaps due to American background that is having a high degree of health and safety awareness. From the propositions drawn from the model of study the following hypothesizes have been proposed for verification:

1. The practice of appeasement, cleansing ritual and use of protective medallion by workers will significantly determine their risk perception.
2. The practice of appeasement, cleansing ritual and use of protective medallion by workers will significantly determine health risk pattern.

3. Methods

Population and Participants

In order to account for the effect of fatalistic beliefs on risk behavior patterns, fishing operators in the North West Region of Cameroon were surveyed. The community, Bambalang is situated some 5 Kilometers from Ndop, the head quarter of Ngoketunjia Division, North West Region of Cameroon. The population was suitable for the investigation because fishing is not only perceived as an economic activity, but also as a socio-cultural display and a source of identity for the people. Most fishing operators use hazardous tools like bamboo and wooden canoes, broken paddles, patched nets, hooks and traps to capture fishes. Despite prevailing risks they feel protected from any form of danger since they have offered sacrifices to the gods, cleanse themselves of misfortune and carry along their protective medallions. Using convenient sampling technique, 130 fishers (35.7% females, 64.3% males), age range 19-51 (M=29.02; SD=10.24) were drawn from the fishing operators. Majority of fishers ranged from 26-35 years, and were mostly primary school (41.1%), secondary school leavers (22.5%), and some University graduates (10%). Participants could express themselves in "pidgin-English", local English language. Collection of information was done with the assistance of a guide who was briefed on ethical codes, and participants were further advised they could opt out of the process at will. Briefings took place sporadically with participants on the nature of the study and how useful the results will be to their fishing operations.

Data collection measures

A questionnaire was used to gather information from participants. The sub scales that were constructed, adapted and validated by the investigator had 5 sections, and some open ended items to capture demographic information. Demographic information comprised age, education, sex, marital status, occupational activities, problems encountered and perspectives. The first section of the subscales comprised a five point Likert scale for participants to indicate the most appropriate alternative and open questions requested participants to fill the necessary responses. Questionnaires that were incomplete or poorly filled were discarded from the analysis. Of all the 150 questionnaires administered, 130 were used giving a response completion rate of 86.66%. The 5-point scale responses were coded ranging from 1 ("strongly disagree") to 5 ("strongly agree"). Data were collected and descriptive and inferential statistics were used for analysis. The instrument has the following sub scales:

Measure for Appeasement: Appeasement was defined as the act of calming the spirit of the dam to ensure mental and physical stability of fishing operators to feel safe, seek for blessings and prosperity from cosmic powers to carry out their activities. This subscale was designed to capture information on the appeasement of gods, and derived from literature (Ampadu, 2015; Bernard et al., 2011; Keeley et al., 2009). Indicators were sacrifices, libation, ritual dancing, throwing of coins in water, camwood use and songs of praises. Sample questions were: "Sacrifices are offered to appease the gods", "Coins are thrown in water to appease spirits of the dam", 6 items, and alpha subscale was .68.

Measure for protective medallion: Protective medallion was defined as symbolic artifacts or spirits invoked and deployed by fishers as protective technologies. The measure was locally designed to capture information on uses of protective medallion, and this was derived from literature (Kouabenan, 1998; Ngueutsa & Kouabenan, 2017; Ruiu,

2013; Vaughn et al., 2009). Indicators for the construct were the use of rings, talisman, bangles, jujus and protection songs. Sample items: "Wearing rings protect fishers from accidents" "wearing bangles protect fishers from bad spirits", 5 items and alpha of .71.

*Measure for cleansing rituals***:** The construct was defined in terms of purification rites that are reassuring to carry out fishing without any fear of health and safety disaster. The homegrown subscale was developed with the assistance of existing literature (Ampadu, 2015; Cohen et al., 2015; Kouabenan, 1998; Mahemebe & Samuel, 2016). Indicators for the subscale were purification rites, dam bath, chewing of herbs, incantation, dam face washing and dam libation. Sample items: "Washing the face with spiritual leaves makes fishers see dangers," "Bath in the dam purifies fishers for work," 6 items, and alpha .74.

*Measure for risk perception***:** The construct of risk perception was defined as representations or meaning given to potential hazards in the occupational setting, and as predisposition for the expression of risky patterns. The measure was intended to collect information on risk perception, and the Domain-Specific Risk-Taking (DOSPERT) Scale (Weber et al., 2002), was adopted to assess the construct. On this subscale participants rated

perceptions of risks on each pattern of behavior, and indicators comprised risk culture, risk motivation, interest, opportunity, risk activities and perceived gain. Sample items: "taking risk is a way of life" "he who risks nothing, gains nothing" "I like taking risk in fishing", 6 items, and alpha was .78.

*Measure for health risk patterns***:** At risk health pattern was defined as behavioral expressions that can induce risky health behaviors during operations. The subscale was adopted from The RT-18 (Haan et al., 2011), a scale used in assessing young adults' risk taking behavior. In this scale, respondents evaluated their likelihood of engaging in risk behavior during fishing activities, with the following indicators: exposure to cold, exposure to rain, work with injuries, fatigue, drinking, illness, 6 items and alpha .80. Sample items are: "I continue doing fishing when I am tired" "I do fishing when I have injuries."

4. Findings

Presentation of findings starts with descriptive statistics, and mean values and standard deviation of the constructs have been shown in Table 1.

Table 1.   Bivariate correlation, mean standard deviation

Variables	Mean	Std.D	1	2	3	4	5
Appeasement (1)	11.82	3.60	1	.247**	.115	.665**	.120
Protective Medallion (2)	12.12	3.41	.247**	1	.436**	.784**	.274**
Cleansing ritual (3)	9.30	3.09	.115	.436**	1	.692**	.244**
Overall fatalism (4)	33.24	7.21	.665**	.784**	.692**	1	.294**
Risk perception (5)	22.22	5.03	.120	.274**	.244**	.294**	1
Health risk patterns (6)	12.09	3.4	.244**	.223*	.088	.265**	.115

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

According to the findings, appeasement positively and significantly related with protective medallion (r=.247, p<0.0), overall fatalism (r=.665, p<0.0) and health risk patterns (r=.244, p<0.0), while relationships with cleansing rituals (r=.115, p>0.0), and risk perception (r=.120, p>0.0), were insignificant. Protective medallion correlated significantly with cleansing rituals (r=.436, p<0.0), overall fatalism (r=.784, p<0.0), risk perception (r=.274, p<0.0) and health risk patterns (r=.223, p<0.5). Cleansing rituals correlated positively with overall fatalism (r=.692, p<0.0), risk perception (r=.244, p<0.0), but failed to relate with health risk patterns(r=.088, p>0.05). Analysis identified overall fatalism as having the highest mean score (M=33.24; SD = 7.21), followed by risk perception (M=22.22; SD = 5.03) and health risk patterns (M=12.09; SD = 3.41). Although some alphas for subscales appeared low, the measure had an aggregate alpha of .73, implying a recommendable degree of internal consistency for the instrument.

Table 2.   Workplace fatalism and risk perception

Predictors	**B**	**SE**	**βeta**	**t-value**	**p-value**
Appeasement	.167	.123	.120	1.359	.176
Protective medallion	.403	.125	.274	3.212	.002
Cleansing ritual	.397	.140	.244	2.837	.005
Predictors	**R**	**R²**	**Adj^R2**	**F**	
Appeasement	.014	.014	.007	1.848	
Protective medallion	.274	.075	.068	10.316	
Cleansing ritual	.244	.060	.052	8.049	
Overall fatalism	B	SE	βeta	t-value	p-value
	.204	.059	.294	3.462	001
Overall fatalism	R	R²	Adj^R2	F	
	.294	.086	.079	11.933	

The assumptions of the study were also verified. The first hypothesis proposed that the practice of appeasement, cleansing ritual and use of protective medallion by workers

will significantly determine their risk perception, and regression results have been shown in Table 2.

Appeasement of gods failed to predict risk perception (β=.167, R^2=.014; t (127) =1.359, P=.176), and the hypothesized relationship was rejected. Protective medallion was reported as a significant predictor of risk perception, (β=.403, R^2=.075; t (127) =3.212, P=.002), and was able to explain the variation in the dependent variable at 07.5%. It suggested that a unit increase in protective charm will lead to a corresponding increase in risk perception by 0.403 units, confirming the model as a good fit (F-value= 10.316), and accepting the hypothesis. The core component of cleansing ritual determined risk perception (β=.244, R^2=.060; t (127) =2.837, P=.005), and the independent variable was able to predict the outcome measure at 06.0% with F-value of 8.049. This indicates the fitness of the model, thereby confirming the alternative hypothesis of a significant influence. The overall fatalism was positioned as a predictor of risk perception (β=.294, R^2=.086; t (127) =3.462, P=.001), and the model was shown as a good fit (F-value= 11.933) as it explained the variation in risk perception of workers at 08.6%. It was observed that an increase in overall fatalism will influence a corresponding increase in the outcome measure at .204 units, and the assumption of a significant relationship was confirmed.

The second hypothesis proposed that practice of appeasement, cleansing ritual and use of protective medallion by workers will significantly predict health risk patterns of workers, and repression results presented in Table 3.

Table 3. Workplace fatalism and health risk patterns

Predictors	B	SE	βeta	t-value	p-value
Appeasement	.231	.081	.244	2.843	.005
Protective medallion	.222	.086	.223	2.586	.011
Cleansing ritual	.097	.097	.088	.997	.321
Predictors	R	R^2	Adj^{R2}	F	
Appeasement	.244	.059	.052	8.080	
Protective medallion	.223	.050	.042	6.667	
Cleansing ritual	.088	.008	.000	.993	
Overall fatalism	B	SE	βeta	t-value	p-value
	.125	.040	.265	3.105	.002
Overall fatalism	R	R^2	Adj^{R2}	F	
	.265	.070	.063	9.638	

Appeasement of gods predicted health risk patterns (β=.224, R^2=.014; t (127) =2.843, P=.005), and the independent variable was able to explain the variation in level of risk patterns at 05.9%. Results suggested that a unit increase in the level of appeasement increases the level of risk perception (b-value=0.231). The model was considered a good fit (F-value=8.080; P<0.05), and the assumption was confirmed. Protective medallion as a core component was further presented as a determinant of at-risk health patterns (β=.223, R^2=.050; t (128) =2.586, P=.011), and the

independent variable was able to determine health risk pattern of operators at 0.05%. It suggested that a one unit increase in the level of protective charm will lead to .222 unit increase in health risk patterns, indicating a good fit for the model (F-value=6.667). Cleansing ritual failed to predict variation in the level of health risk pattern (β=.097, R^2=.008; t (128) = .997, P=.321). The overall component of fatalism was perceived as capable of determining health risk patterns of workers (β=.265, R^2=.070; t (128) =3.105, P=.002). It predicted variation in the level of outcome measure at 07.0% indicating a good fit of the model (F-value=.9.638), and suggested that a unit increase in overall fatalism leads to an increase in health risk patterns by .125 units. Apart from the insignificant relationship shown with appeasement, the core and overall components of fatalism have been able to predict variation in risk perception, and the hypothesis has been satisfactorily confirmed. In the second case, the core components, except cleansing rituals, and overall fatalism determined health risk patterns of workers. Consequently, the belief systems of fishing operators have been unveiled as capable of predicting risk propensity of workers.

5. Discussion

The present investigation on workplace fatalism is one of the few studies conducted at work, particularly with operators of small scale artisanal activities in a high risk work setting in Cameroon. The present interest was designed to find out if workplace fatalism has any relationship with risk behavior patterns of workers. Precisely, it explored the strength of the core and overall components of fatalism as determinants of risk perception and at-risk health patterns of workers. As predicted, protective medallion, cleansing ritual and overall component significantly predicted risk perceptions of participants. Although against expectations, appeasement failed to determine the variation in the outcome measure. The significant findings agree with prior investigations on socio-cultural practices and perception of risks (Kouabenan, 1998; Ngueutsa & Kouabenan, 2017), and fatalistic beliefs and the related concept of risk attitude (Fomba, 2009; Üngüren, 2018). Therefore, in matters of health and safety, individual dispositions such as freewill have little or nothing to do with behaviors of workers since they are controlled by mystical and socio-cultural forces. Furthermore, these fatalistic forces seem to affect representations of health and safety hazards, and moderate the perception of risk as danger. This can explain the interest and motivation of workers to take risk, and this power is drawn from feelings of security, from protective medallion and mystical powers from the gods. It also suggests the influence of wider societal culture on risk behavior of operators considering that public health and occupational health culture are determined by lifestyle. Therefore, fatalistic beliefs cannot be isolated from Bambalang fishers' behavior, and it is increasingly being ascertained that belief patterns have a role to play in health and safety behaviors. It

is clear that traditional risk attitude mitigates the basic principles underlying behavioral safety approaches where purposive behaviors such as cognitive restructuring, behavior shaping and participation are highly desired in modeling safety and health behaviors (Fomba, 2009). Against expectations, the core component of appeasement could not account for risk perceptions of fishers. Offering sacrifices to the gods is generally a wider community business, and might have appeared weak in addressing issues of personal risk as compared to protective medallion and cleansing rituals that are seemingly personal. Despite the inability of the appeasement construct to determine risk perception, overall fatalism was able to account for the variations in level of risk perception of workers.

Interest in assessing the impact of fatalistic beliefs on at-risk health patterns of workers was fundamental to the study. Findings showed that appeasement and protective medallion were significant predictors. Although cleansing ritual was not significant, the overall component OF fatalism could explain variations in health risk patterns. This concurs with investigations on livelihood in rural household (Bernard et al., 2011), protective behaviors in trade and occupations (Kouabenan, 2009; Mahembe & Samuel, 2016) accident and destiny, health threatening behaviors and noncompliance (Cohen et al., 2015), choice of protection for workers (D'Orlando et al., 2010) and occupational drivers (Fomba et al. 2019). This suggest that fatalism is an urge to fishing operators considering that ritual dancing by the dam, pouring libation, the use of "jujus", wearing of rings and use of talisman facilitated at-risk behaviors such as working with injuries, exposure to rain, and fishing with bamboo canoes and work under stress (fatigue). The fact that cleansing ritual did not predict health risk patterns suggests that activities such as purification rights, washing of face at dam and bathing in the dam are customary, and frequent public practices and could not be responsible for risk behavior patterns. This agrees with the results of Keely et al. (2009) that fatalism is a functional mechanism to cope with certain health situations, and that disease and health outcome depend on genetics and behaviors, and not on socio-cultural beliefs. Therefore, other factors such as education, personality and reasoning could explain the failure of cleansing practices to predict health risk patterns of the workers.

Theoretical and practical implications

It is obvious that people differ in the ways they resolve work-related or personal decisions that involve risk and uncertainty (Weber at al., 2002), and this has been examined in this study within the context of belief systems. The study highlights the importance of fatalism in risk perceptions and health risk patterns with implications on health and safety management in high risk occupations. The findings have several important theoretical and practical implications on workers operating in settings with lots of hazards to health and safety. Evidence showed that occupational fatalism strongly relates with health and safety risks, which is detrimental to health and safety management strategies being advocated by the Government. At times this induces workers to lower their risk acceptability level and work with poorly-maintained or inappropriate tools (Kouabenan, 2009), with the understanding that mystical forces will save them from any form of danger. This is ingrained in the minds of workers suggesting that education efforts could help alleviate fatalistic beliefs (Niederdeppe & Levy, 2007). The activities of the Government and partners had long been intervening in production and safety related activities, and although this has often met with resistance from the workers, it is necessary to intensify the activities. Since fatalism kills self-will and internal locus of control and render workers powerless, a sense of initiative, agency and self-efficacy needs to be rebuilt to enable the workers take care of their own destinies. Although this is an intricate business in such a culturally-addicted community, change agents need to develop a growth mindset, and creatively build modern technologies on the cultural needs and realities of the people.

It has been recognized that culturally-based preferences and attitudes cannot be omitted from business analysis because they shape people's expectations concerning actions and outcomes and fatalism seems to play an important part in this context (D'Orlando et al., 2010). This is evident in the present case considering that perception needs to be subjected to behavioral change mechanisms, and cognitive restructuring through counseling and behavior shaping is critical. But it should be noted that this is often difficult because fishers must experience dissonance in the process of bridging their ties with the demands of culture and their ancestors. Moreover, any explanation involving external or supernatural forces may be a means of reducing the dissonance experienced but this does not appear to resolve the problem (Kouabenan, 1998). Since life, health and sustainable livelihood should be placed at the centre of the process, changing fatalistic culture and reducing the perception of helplessness among the workers can be an effective procedure for moderating at-risk behaviors in their operations.

In this study, all the core components of fatalism were shown as powerful mechanisms in promoting at risk behaviors. This therefore undermines the insignificance of appeasement in risk perception and that of cleansing rituals in at-risk health patterns. Considering that the sheer prevalence of fatalistic beliefs about disease prevention is a cause for concern (Niederdeppe & Levy, 2007), exploring such weakening values as an entry point in safety education and behavior change has competitive edges. It goes with the introduction of both indigenous and conventional technologies that are capable of facilitating expected health and safety practices at work particularly in such a high risk setting. This requires a creative and innovative approach in order to integrate eco-cultural values into modern fishing technologies in order to promote sustainability in the occupation (Fomba et al., 2019). This is where the Government should come in with all the necessary technical assistance to deconstruct regressive and fragile values.

Building creativity and innovation on belief systems of the people is drawn from the understanding that different cultural groups have diverse belief systems with regard to health and healing in comparison to the Western biomedical model of medicine (Vaughn et al., 2009). It should therefore be reiterated that workers have internalized their values as part of their thinking and emotions, and strategies will face resistance if agents fail to build on what the people are already having and deploying in health and safety management.

The current study on workplace fatalism and risk behavior patterns is not without limitations. In the first place, the self-report measures were prescriptive and could not allow participants to adequately express a comprehensive opinion about the phenomena of fatalism and practices in high risk occupations. Fatalism appears plausible and sacred and Focus Group Discussion or key informant interview could have attracted more friendly responses from participants. This may also affect the result of the study. The sample appears bias with regards to gender, although fishing operation is culturally a male dominated occupation considering the risk factors involved. Nonetheless, it may affect the generalization of the results in terms of application to gender sensitive situations. The alpha levels of fatalistic variables (appeasement, protective medallion and cleansing rituals) were just good as compared to that of risk behavior patterns that adopted a standardize scale. Although this may affect data quality and results, items dealt with information on a subject matter that is perceived as sacred and spiritually sensitive, and such data cannot be easily divulged. The study addressed fatalism at work with regards to health and safety risk and did not gi beyond. Therefore, caution should be employed in the use of the results of the present study in applying to all dimensions of work processes. Despite the shortcomings, the study was a very good attempt at exploring fatalism in a culturally addicted society with results that have implications on theory and practice.

Concluding Remarks

Occupational fatalism has been explored as a factor in workers' behavioral risk patterns in a high risk occupational setting. It has been recognized that fatalistic posture is still very present in the workplace today (Silvia et al., 2020) and affects behavioral patterns affecting health safety and performance. It appears a source of drive in determining health and safety practices of workers in a culturally addicted workplace and draws a lot of lessons from risk psychology. The original intention of fatalism is to safeguard health and safety at work, although such practices are loaded with beliefs and mysticisms that are beyond scientific comprehension. It has been noted that several potential barriers to behavior change have been found including the belief that one's health is a product of luck, destiny or divine intervention and these are beliefs that fall under the general rubric of fatalism (Cohen et al., 2015). Ensuring health promotion behaviors becomes complicated since behaviors are dependent on dictates of culture from the wider community, which is reputed for resistance to contemporary health and safety education and practices. It should be understood that in fishing many valuables such as water, fish species, nets, and practices are revered and even worshipped (Fomba et al, 2019), and care should be taken when deconstructing values that appear regressive to health and safety. In this regard, occupational health promotion strategies should be part of traditional training packages being offered to fishing operators, and strategies should take into account their core values. This stands to facilitate the implementation of technical, legal and psychosocial precautions about occupational health and safety instead of defining the causes of occupational accidents with expressions like destiny or fate (Akalp et al., 2015). It is clear that studies in workplace fatalism especially in indigenous occupations are rare in Cameroon. Future studies might measure occupational fatalism in relation to wider cultural beliefs and conformity, and resistance to the introduction of conventional technologies. The present study could be replicated in different sectors to verify if they have same beliefs, and if health behaviors are influenced by fatalism. A study on the possible consequences of neglect of fatalism in the workplace could be assessed in order to understand the level of anxiety being experienced by those who intend to abandon with ensuing mental and affective consequences. This will constitute a firm bases for relevant education and counseling in order to achieve behavioral health and safety without stress.

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