

# Revitalise and Fast-Track Safety Culture in Industry or Face Incidents/Losses

Harbans Lal\*

## Abstract

Safety culture is what we call people's safe behaviours. Safety culture is a fast-growing wave in the industry today. Addressing gaps in building a long-term supportive safety culture for companies underlines a set of unresolved questions on behavioural risk management in the industry, and possible solutions. Everyone raises a voice for safety, then safety culture comes into existence and the risk disappears – is it so simple? Most companies delay their HSE decisions till they suffer. Why so? Without inculcating safety as a core corporate value, the industry cannot be considered safe. Behavioural safety culture is a live surveillance on the risks and their spot-correction to ensure that the safety culture building process is active. Safety culture behaviour is necessary to overcome incidents and accidents at the work sites. Behavioural safety education for one and all is the safety culture being addressed the most. Ideologies on safety cultures vary across the industries in terms of practices. The present article dwelt on identifying the unresolved critical questions on behavioural safety supportive culture implementation in the industry, and the possible solutions. The data were collected from 603 industry professionals who were the study participants. The sampling method was a non-random convenience sampling. A set of ten themes of research findings reflected upon critical issues, such as basic questions on long-term safety cultures; reactive safety culture; collective voice and leadership for at-risk behaviours; religion, spirituality, and festivities for safety at sites; implementation of safety with a consideration for others; features of companies not empowering their workforce for performing safety implementation; competency gap among the safety professionals; the major roadblocks in HSE decision-making; the spot-implementation of behaviour-based safety (BBS) approach by top leaders; and myriad factors to advance the success of a long-term supportive safety culture. Fast-tracking

supportive safety culture at sites would mean the next level of hard work.

**Keywords:** Behaviour, Risk, Safety, Culture, Qualitative

## Introduction

Building safety culture is a step up to business excellence improvement. Fast-tracking supportive safety culture would mean fast-tracking business excellence. The difficulty in having a long-term supportive safety culture on the Board of many industries is a multifaceted issue in organisational behaviour. In a positive safety culture, workers will prefer safety in everything they do, even beyond the industry standards in everyday activities. In a poor safety culture, safety is an afterthought or a laid back step (ISHN, 2021).

In recent years, the concept of building a positive safety culture has gained momentum (Williams, 2021). Whether the long-term supportive safety culture will be manageable across industries in a decade from now is debatable within the whole range of issues involving this. In the first place, who are the people responsible for the failure of the long-term safety culture at the site? Do we need a corporate value of actively caring before we set up a long-term safety culture? Are the internal moral values that drive the lifesaving process (the safety of people) at the backdrop of industrial profit calculations? How do these two clash and affect the preferences of leaders? What happens if one remains silent over the sight of at-risk behaviours, which need an elaboration of the consequences as well as the power of observations, followed by immediate spot-corrections? The negotiators of safety culture, that is, the safety professionals in the company, remain weak in pushing the decisions of building a long-term safety culture while discussing it with the top leaders. Nobody discusses the moral values of saving lives at the sites,

\* Professor of Psychology (Retd.), SNTD Women's University, Director – Forum of Behavioural Safety, Mumbai, Maharashtra, India. Email: [kailahl@hotmail.com](mailto:kailahl@hotmail.com)

but just the minimum safety as a management dictum. The discussion is not value-based; rather, it is driven by the economic values of the company. Nobody raises the question of the moral value of the company that should actually drive the safety decisions. Hence, until the CEO wants the safety of the people to be a value at the Board level, it is difficult to have a long-term supportive safety culture in industries across the world. Therefore, the status of safety in the higher meetings of the companies is very important. The concept of safety is to be understood, for the health of an employee, not just for saving them from injury. So safety is a subtle act of morality deep-seated in the minds of employees; it can be seen in their behaviours and actions. Safety is an organisational ethical dimension, not just being good when actually one is not. The dilemma of safety as a value and as a ritual is to be resolved into a culture of caring emotionally and connecting with anyone who is at risk. Thus, safety culture keeps evolving, as this concept keeps evolving at sites with safer practices. ‘Doing’ something for the safety of all is a real concern. Finally, the one who gets the credit for safety culture is the organisation itself, in numerous ways. A series of positive short-term actions and changes in safety processes can make a long-lasting difference (Pettinger, 2020).

Behavioural safety culture is a kind of social experiment, wherein the interactions among the people are increased; they care for each other and save each other from injury. Are people behaving safely at our sites? Do we need to understand this? What is influencing people to behave in an unsafe manner? How can we develop a safety culture? Why are safety systems and the management unable to develop a safety culture? These questions are answered in the BBS programmes. Are behaviours measurable? Is human behaviour the root cause of incidents and accidents? These questions are solvable.

Safety cultures endure when they are part of an overall successful organisational culture (Paoletta, 2020). Long-

term supportive safety culture implementation helped sites that had a history of fires and fatalities develop a culture of saving lives and also providing financial safety. Safety culture definitely improves when organisations involve all people in the process of risk control by observation and spot-correction. BBS is a ‘skill upgrade’ for all employees; it is invested in by companies to practice on-the-job daily risk control as an integral part of the business strategy. Adhoc-ism in long-term safety culture management by the employers is a high risk proposition for business sustainability (Kaila, 2021). Safety culture supports and pushes the business to the next level.

Almost all illnesses are treatable, as of now, when identified at an early stage; this is true about at-risk behaviours at sites as well. So, why suffer from incidents and accidents, and lose lives and businesses. Less than one per cent of organisations in India follow a planned intervention of behaviouralising long-term safety culture implementation; hence, the scope for fires and fatalities continue, as a result of which the country’s businesses suffer huge losses. It needs to be understood that there is no shortcut for the development of a supportive safety culture.

Vasudha Pharma BBS case study 2021-22: Within six months, by training 30 employees, the company created a safety culture involving corporate leaders, site head, HODs, and second-level steering team, spreading the idea of spot-correction (Fig. 1), all over the plant, of 600 of the workforce, besides the EHS department. Spot-correction means if any at-risk behaviours are not dealt with immediately, both the people and the business will be at stake. The incidents reduced significantly month after month, and near-miss reporting increased. Barriers to safety were identified and rectified regularly. By holding weekly meetings and rewarding the best observers, the company is now taking BBS forwards to families, schools, and the surrounding plants.



Fig. 1: Spot-Correction Mechanism (Capture, Connect, and Correct) Adopted by TKAP

The organisational behaviour culture drives the accidents that injure or harm thousands. To eradicate at-risk behaviours, safe behaviours have to be appreciated, which are followed by the people in the plant every day, as observers of the safety culture. There is an urgent need for reforms in the safety culture of every plant, which can only be people-based. Most safety professionals are trained in safety systems, not in safety culture development, which is the need of the hour. This article provides inputs in this direction (Harbans, 2021). Safety culture is how you can serve humanity without incidents and accidents, not how much profit you can make from your businesses. Traditionally, the CEO of a company should assure people at the site that they are safe each day. If the CEO cannot do this, then perhaps they cannot run the business operations safely. However, in the BBS approach implementation by the company, it is the other way around – each person at the site assures the other that they are safe. Most of the Indian safety professionals in the plants are still pursuing with the management with respect to the cost of safety training, and finding it difficult to convince the top management for long-term initiatives for safety culture.

*A Case:* One query and reply from the management: what is the percentage of unsafe observations that can be categorised as a concern rather than a hot spot? I feel 2% and less can be a concern rather than hot spot. Now we are tracking technical hotspots and general hotspots separately. It would be wrong to understand in terms of percentage. You know, a single observation of at-risk behaviours can be very critical. For any observer, each unsafe observation is a concern for immediate correction; that is all. Percentage of at-risk behaviours is to be understood in terms of goal setting for each department head. According to Pavan Rao of Sembcorp Nellore: Difficulty is that HODs want to duck under the statistics and management is monitoring without forcing HODs to act. It is a tricky execution bias (Dharm Sankat). Drifting from dependent safety culture at all levels is a reflection of negotiation between production and safety. The author handled one such situation at GAIL in a monthly follow-up visit when ED, GMs, DGMs, and HODs were in a similar conflict at one big site. It was discussed and sorted out. BBS is a concern for correction; let us not get lost in its statistics or terminology. Risk is risk, whether 1% or 2%. Risk is never small, its effects are critical. If HODs do not understand this and managements do not wake up and act on this, incidents will happen. Let us raise our voices against it.

Long-term zero-risk safety culture is an interaction among the people over time, months, and years. Zero-risk management involves lots of behavioural dynamics from the top to the bottom, as well as the associates. However, it is also interesting and insightful, as well as an emotional struggle to achieve it. In this regard, many organisational antecedents need focus. BBS intervention provides an experience of change within an organisational safety culture through the processes of observations and spot-corrections incorporated by employees on each other; once this intervention becomes a routine, and employees begin to accept it, it gradually turns into an integral part of the company values (Kaila, 2021).

Many seniors in the industry give decorative safety speeches just for corporate mileage or lip service; it does not serve the purpose of building a safety culture at the sites. Several questions keep bothering many of us in the industry. Some of the basic questions are: Why do people not understand the difference between safe and unsafe behaviour? Is a perfect safety culture possible? Why do managers not get involved in safety implementation? Why are safety observations not discussed at the sites?

## Objectives

Review of literature revealed that the safety culture management is a relevant, critical, and major concern for companies. In this direction, it is a good idea to explore various learnings of field professionals, especially during COVID-19 when the HSE culture is a real concern. Hence, the following research objectives were set:

- To explore basic questions on long-term supportive safety culture.
- Features of companies not empowering their workforce for performing safety implementation.
- Competency gaps among the safety professionals.
- Major roadblocks in HSE culture decision-making.
- Factors to advance the success of a long-term supportive safety culture.
- To formulate recommendations.

## Research Methodology

### Sample

Around 603 HSE, medical, education, management, and mental health professionals were considered. For

this research, a total of 1,100 people were approached, out of which 603 completed an action field survey with the researcher. These research participants had been implementing behavioural safety culture at their work sites. The research participants included the CEO, directors, managers, heads of departments, and safety professionals belonging to the public and private industrial sectors, including chemicals, construction, gas, power, and steel, across India.

### Types of Data and Data Collection Method

Both primary data (interviews, discussions) and secondary data (incident and accident rates) were collected. Interviews based on open-ended questions and personal in-depth discussions were conducted through remote data collection techniques over five months (August-December, 2021) from diverse locations and organisations in India. The sampling method used was a non-random convenience sampling. Participants were selected from the researcher's contact list, and invited through WhatsApp and e-mail to complete the online survey.

### Research Design

This is a concept-building, innovative, and exploratory research design, at the behest and involvement of field professionals, using a qualitative descriptive framework.

### Data Analysis Techniques

This study is part of an ongoing interdisciplinary intervention of behavioural science, management, and industrial safety disciplines, and part of a national longitudinal action survey in India. The crucial element in this research was data collection, conducted by means of controlled interviews and questionnaire surveys in these organisations. Their responses to questions related to safety cultural aspects were collated.

During the process of thematic content analysis using the transcribed data, ten global themes were identified from the qualitative data, which are discussed below:

- Basic questions on long-term supportive safety culture.
- Reactive safety culture.

- At-risk behaviours, observers' collective voice, and leadership.
- Religion, spirituality, festivities for safety at sites.
- BBS is an implementation of safety with feeling for others.
- Features of companies not empowering their workforce for performing safety implementation.
- Competency gaps among the safety professionals.
- Major roadblocks in HSE decision-making.
- Spot-implementation of BBS approach by top leaders.
- Factors to advance the success of a long-term supportive safety culture.

### Discussion/Findings on Ten Themes

“BBS supportive culture is a safety vaccination for one and all”, a plant manager said during an online session. Leaders need to change their safety model before it is too late; they need not worry about the criticism for what they are doing. Change anyways brings criticism. You need to bring up positive changes. First, learn it yourself before you propel it in your organisation for success.

Sometimes, even seniors or your colleagues take it as an offence or insult when observers ask for compliance with safe behaviours. For various reasons, in India, safety and health are a low preference in our families, although some change is visible due to COVID-19, with lives lost.

The basic flaw is that the safety standards have not been established. Jugad (common sense practice) systematised has become a standard in the industry. Hence, in the journey of safety, (definition, systems, culture, and its management), many unresolved questions are there on the behavioural risk management for safety culture implementation. The possible solutions are being explored as follows:

#### Theme 1: Basic Questions on Long-Term Supportive Safety Culture

In India, the employers' pocket size decides the safety size for employees. Whether employees deserve a safety system or culture is decided by how much profit the company makes. Care comes second; it is money first,

not safety first. That is the bottom line. So the future of businesses is at risk, as without safety, the business cannot sustain. The at-risk behaviours at the site are life-threatening to employees and business-threatening for employers. It is preventable with BBS culture. Switch to a new culture for a sustainable future of our businesses, caring for employees' right to safety. Let us change the OSH scene together. Sometimes, it is difficult for even leaders to convince some people, due to certain contingencies at the sites that HSE violations are not acceptable to practice. It is to be realised that at-risk behaviours in industries are unsafe to the citizens in civil societies, causing disabilities, injuries, and even proving fatal. Safety is a moment of spot-correction, Rest is in scope of an incident. Spot-correction is a function of one and all to achieve safety culture. There seems to be a bleak future for businesses if they do not establish long-term supportive safety culture at their sites. Though a large number of companies believe in this, they do not appear to be acting accordingly.

The 12 basic questions on long-term safety cultures that emerged during the discussions were:

- Does investing in supportive safety culture pay?
- Why do ideologies on safety cultures vary across the industries, in terms of practice?
- Why is the industry confused between mental safety and behavioural safety?
- What are the periodical impact assessments for safety culture in organisations for improvement?
- How to understand the features of companies that do not empower and enable their workforce for performing safety implementation, and to provide a framework for facilitating plants to perform safety implementation by their workforce?
- Why do the corrections of at-risk behaviours not become permanent safety culture after a few observations; how long would it take? What is the involvement of HODs in this aspect? What is the response of the corporate on this issue? What is the inter-relationship between corporate, plant management, HODs, and observers for achieving a permanent safety culture?
- A well-planned BBS approach opens one's mind to how safety is redefined, measured, and achieved as a company culture. However, some people at the sites do not wish, a reactive safety culture to go away, why?
- Why do people not understand the difference between safe and unsafe behaviour? Why do managers not get involved in safety implementation?
- Why are safety observations not discussed at sites?
- Why are there competency gaps among the safety professionals to convince their own managements for long-term safety culture solutions? Why did HR departments not realise and fill this competency gap? Are our training colleges or institutions insufficient to train the safety professionals for the required competencies?
- How are human factor and safety culture related? Does the exponential value of human factor reflect in safety culture?

The above questions of industry delve upon the critical concerns that impact safety culture in organisations. According to the Institute for Industrial Safety Culture, safety culture is a set of ways and behaviours shared within an organisation, which aim to manage the most critical risks associated with its activities (Velas, 2021).

## Theme 2: Reactive Safety Culture

Most of the serious incidents in India take place when professional safety recommendations were ignored and delayed for implementation, which is true even today. A reactive culture indicates that the safety systems are piecemeal and are developed only in response to adverse events and regulatory requirements (Halligan et al., 2013). By not empowering our workforce to speak up about unsafe behaviours at the sites, our industry suffers from incidents and accidents. Why are industry professionals not giving up the reactive safety culture? According to Pavan Rao of Sembcorp Nellore, "It is their comfort zone and they don't want to take pain". Dr Balkrishna of Gunnebo said, "It may be due to low thinking mindset, and heroic behavior personality, old thinking, like abhi tak kuch hua nahi, hum yahi kaam karte hai bahut saal se, low education qualifications etc.". KK Sharma of DCM Shriram stated that the reactive people at the sites are those who are self-centred and need to demonstrate their power; also, on the other hand, a few need attention/guidance/instructions to perform the necessary tasks, due to their upbringing/culture. In a weak or reactive safety culture, safety is an afterthought, whereas in a positive safety culture, safety is pursued beyond industry standards

(ISHN, 2021). A K Dang of NTPC Safety Academy stated that behaviour-based safety plays an important role in the prevention of accidents; the intervening behavioural science through which the site management empower their manpower, including contract workmen, to be active and not reactive in identifying at-risk behaviours also helps achieve the mission of zero accidents.

### **Theme 3: At-Risk Behaviours, Observers' Collective Voice, and Leadership**

The influence of group collective voices is greater than the fear of any form of punishment. At-risk behaviours are the wakeup call just before incidents occur. The BBS observers' collective voice at the site is an epitome of corporate safety culture which needs to prevail in a positive sense. The observer's training is most important, and they need to understand their daily observations in terms of the company's safety culture. Moreover, safety at the site would not suffer, even when safety officers are on leave, as long as our BBS-trained observers are actively watching for at-risk behaviours. "Yes, we are moving towards this," a plant head said. In this regard, some experiences by the study participants are expressed below:

Peer-group implementation of BBS would be helpful, with support from companies that implemented supportive safety culture successfully; they could mentor other plants to give them online guidance and handholding, to fast-track a culture of safe behaviours across sites.

Regulated surprise monthly BBS rounds by the individual steering team members across the site would help support and strengthen the long-term safety culture. The visible leadership observation daily rounds are important in reinforcing supportive safety culture at sites.

Personal and organisational safety behaviours are significant in building safety culture. We are reducing our personal risk by adopting BBS, and being a part of it actively, people would observe and look after you. In terms of gaining increased risk control, train everyone as an observer. Around 77 per cent of HSE professionals agreed that it takes only one observation to stop any incident; it may be yours! So why not train everyone for the same at the site.

Consider plants, sites, and corporates that have trained a 100 per cent of their manpower, including contractor

staff, as active observers who correct at-risk behaviors on a daily basis for developing a supportive safety culture, for behavioural safety awards.

Nearly 90% of this study's participants expressed that in India, we do not measure well. The organisation does not support a zero-harm policy, if at-risk behaviours are not measured at the work sites. If you do not measure, you do not understand. Beware, it may give you a surprise. Then the question arises, whether a BBS intervention is useful without its measurement aspect. The answer is yes, but it is useful in a limited way, and the risk control is not covered fully, as it is not understood without measurement.

Around 89 per cent of the HSE professionals agreed that we need more corporate safety leaders, who can lead safety implementation passionately as a core value, than safety professionals. This reflects that the dependent safety culture exists at sites to a great extent. We introduced leader-member exchange quality as a central predictor of leaders' support for employees' ideas for constructive change (Urbach & Fay, 2020).

It is noticed that leaders rarely do observation rounds by themselves; rather, they present observations done by their subordinates. In addition, the hot-spots of at-risk behaviours trigger incidents, and spot-correction of at-risk behaviours is carried out; however, the behaviour needs to be changed by regular risk-based conversations (RBC). This is a serious feedback to sustain safety culture at work sites. Successful long-term safety culture management essentially requires a sustained untiring leadership to guide and direct the involvement of all concerned from the top to the last person at the sites. Dedicated leaders can see the vision of a transformed safety culture, in terms of safe behaviours being reinforced by everyone, and its reflection in business excellence.

### **Theme 4**

Religion, spirituality, and festivities for safety at the sites are important forms of multicultural diversity. Many companies witness this during festivals throughout the year, as many company-wide activities (such as Vishwa Karma puja, Ganesha festivals, Christmas, and Eid) are performed involving everyone, and safety messages are communicated by seniors. These group activities bring people from different cultures together. If people feel spiritually safe, they are ready to care for others, and

prevent risks at workplaces. When people respect each other's spiritual values, they bond well and nurture the spirit of safety in brotherhood (Keenan, 2017).

When you say “Hare Krishna”, you create a bond with people at the sites. HSE beliefs and spiritual beliefs are linked, as both are humanly grounded (Kaila, 2021). Accommodating differences with respect to religious beliefs and spirituality in the workplace fosters a psychologically safe work environment (SHRM, 2020). December 14, every year, is observed as the Gita Jayanti in India; Lord Krishna's conversation with Arjuna is considered the Gita. People visit the temples and pray to the lords for their family's safety and well-being.

HSE culture development depends on the involved emotional response of everyone at the site. According to a senior HSE professional, Pavan Rao, at Sembcorp, “We had a LTI where we felt that supervision of our engineer was not sufficient. Always front liners are at greater risk because of their proximity to hazard and less awareness and experience. We saw Rakhee festival was near. Hence we planned and organised special Tool Box Talk. We are responsible for your safety and you are responsible for mine and your colleague's safety. This message hit the core. We will evaluate on continuous basis across both plants. We coined a word Suraksha Bandhan”. Culture is developed over a decade, not months, keep your focus, training has to be perpetual, and continuous. Safety culture is a path, not a destination. I am the safety culture, you are, we are, all are the part of safety culture. Creating a positive safety culture within an organisation has shown to dramatically reduce the rate of injuries and accidents in the workplace.

### Theme 5: BBS is Safety Implementation with Feeling for Others

Managements keep HSE systems in place. Importantly, they need to ensure that the behaviours related to these systems are activated. We need to achieve the unity of the industry's action for HSE cultural change. Behavioural safety implementation is an elevation of care to culture from workplace to anyplace (Kaila, 2021).

According to a manager, “My promise to humanity: I shall keep on developing best safety culture for saving lives from any incidents so that they also can contribute to the service of mankind”. A director said, “BBS flight is ready,

just check in, stay onboard, enjoy inflight facilities of zero-harm and zero-incident, destination is safety culture”.

Behavioural safety is a change implementation process; through a well-planned intervention as a subject of applied behavioural science involving all stake holders for risk control in personal, social, and work settings, it is a mission of saving lives and businesses by nurturing mentors and observers, along with result-oriented bold leaders. The behavioural safety approach proves excellent for those who are aware of its concept, process, roadmap steps, outcomes, and its timelines of cultural changes. Fig. 2 indicates that organisational behavioural changes are achievable over the years.

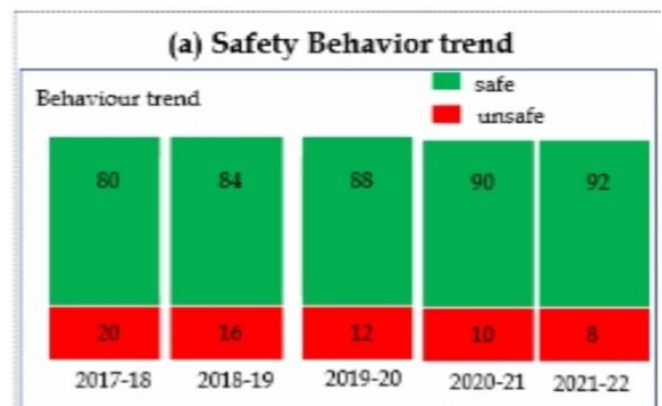


Fig. 2: Organisational Behavioural Changes

NSC National Safety Month 2021: Week 3 – It is vital to feel safe on the job. To have a truly comprehensive safety programme, managers need to include psychological safety (Barnes, 2021). A BBS survey across Indian locations revealed the following:

For corporates, safety is an agenda; for contractors and workmen, safety is zindagi (life). There is a radical difference and difficulty in safety implementation results.

Around 90% of the observation teams at the sites are still focusing on unsafe conditions, not at-risk behaviours. It should be the other way around. The company needs a planned intervention of behavioural safety approach.

Executives at the sites are focused on outcomes, and not safe outcomes. They need to tune their eyes for safety, and focus on BBS, which is going beyond risk assessment and control.

The site head writes thank you notes every month to all the workforce on their behavioural safety observations

contributing in promoting safe behaviours at the work sites every day. The site heads also ensure retraining of observers.

We go for global examples; we need to make the system Indian, local, and economical, and involve non-safety professionals such as maintenance, operations, and quality, to sustain safety cultures by diversifying it. Business sustainability is an outcome of excellence in safety culture.

Rightly said by a veteran safety professional during a BBS course inauguration, just by expecting a certificate, or having a BBS presentation, one cannot think of creating a safety culture; it is a committed action with expert mentoring (Kaila, 2021). This mistake is often done, beware. A safety professional adds, it is like having a valid driving license and not following the road safety rules.

Another seasoned professional emphasised that fortunately our commitment to zero-harm has taken us into a lot of research which has paid dividends in providing the best safety culture.

One of the corporate HSE heads was not responding for months. I just called him to know his well-being; he lost his young son and daughter in Delhi in the second COVID wave. The son was an engineer (23) and the daughter was a doctor (25); it happened in May 2021. We need to care for the seniors as well.

### **Theme 6: Companies not Empowering Their Workforce for Performing Safety Implementation**

Companies can ensure success in their safety procedures by building a culture of safety (Vos, 2021). If you really wished to create a strong safety culture, you must listen to every observer who developed an emotion in the heart of the observed who behaved unsafely to behave safely (Kaila, 2021).

The subject of how to conduct the BBS process as a “long-term planned intervention of applied behavioural science” needs to be addressed. When you do not spend on safety, you spend on incidents. Low-safety budget is equal to high-incidents budget. It is important to know the pitfalls on the journey of turning around a sick safety culture by mentors addressing the safety culture

engagement, reflecting on the real-world experiences with safety culture transformations (ISHN, 2021).

There is a need to include safety culture in the personal life of leaders, for effectively implementing behavioural safety at the sites. If you do not emphasise or spend on safety and health in your personal life, you tend to do the same at the workplace, in corporate decision-making for HSE aspects.

Ten features (Table 1) that would help measure and build the action plan for companies, in empowering their workforce for performing safety implementation.

**Table 1: Ten Features of Companies not Empowering Their Workforce for Performing Safety Implementation (Mark Each Item Yes or No)**

<p>Low on the concept of psychological safety for workforce.</p> <p>Low on the values of human compassion and empathy.</p> <p>Low on corporate social responsibility.</p> <p>Low on corporate care as a core value.</p> <p>Low on international business operations.</p> <p>Low on leading indicators, but high on lagging indicators.</p> <p>High on reactive and dependent safety culture.</p> <p>Low on independent and interdependent safety culture.</p> <p>Low on their leadership safety consciousness.</p> <p>Low on safety implications on business and employees.</p> <p>Scoring: The number of Yes means the company is not empowering their workforce for performing safety implementation.</p> <p>Indicate an action plan for improvement based on the number of Yeses:</p>
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

### **Theme 7: Competency Gap among the Safety Professionals**

Competency development is a life-long process. The experienced HSE professionals feel that they are competent, but that the leadership skills are lacking among the top leaders, for their commitment and will to spend on safety solutions. On the other hand, the corporate managements feel that the safety professionals lack the required competencies. There is an emphasis on new skills such as human behavioural aspects of safety culture development, which are neither taught in basic educational institutions, nor are the corporates equipped to handle it; hence, the specialists’ role is important for such organisational interventions to develop an organisation-wide safety culture. The job profile of the HSE

professionals seems to be changing, requiring a new set of skills. Safety professionals cannot be held responsible for lacking competencies, as corporate leaders and HR managements themselves are not safety-minded. Hence, it is an organisational management issue. The MD/CEO/top leaders should be safety conscientious.

Why are there competency gaps among the safety professionals, to convince their own managements about long-term safety culture solutions? Why do HR departments not realise and fill this competency gap? Are our training colleges or institutions insufficient to train the safety professionals for the required competencies?

The above queries were raised to 256 HR and safety professionals in Indian corporates. Responses indicate the following:

Around 80% of the respondents agree that it is true of young safety engineers, and it is a great query for the present times. However, the response patterns of the safety professionals, in terms of the following perspectives, and recommendations, from a variety of sectors such as chemical, construction, gas, petroleum, and steel, emerged:

Perspectives on competency gaps:

- Safety professionals are competent, but since the top management is not focusing primarily on safety, in some of the organisations, safety is compromised.
- The HR department realises the need for safety competency; however, they act as per the management requirements.
- There is a legal shortfall.
- Safety culture is not nurtured since childhood in our education system.
- There are so many factors that go into the development of competency in an individual, for example, age, gender, education, geography, local influences, family background, surroundings, and so on. These factors are never considered on the whole while determining competency. Besides, every individual has a unique culture, every organisation has its own culture, and the hiring authorities have their own culture. These cultures are not complimentary to each other, but are actually conflicting. Due to a lack of uniformity in judging competency, there tends to be a gap which is never filled.

- This is because safety officers are scared about their job. There is inadequate support.
- There is lack of safety culture in the company.
- The management have grown up in a poor safety culture environment. They cannot realise the outcome of not following safety.
- At DCM Shriram, not only the HR, even the top management is very concerned.
- At Jindal Steel, safety professionals raise this as an important issue to convince the HR to bridge the gap.
- At GAIL, it is not the competency gap among safety professionals, but the deficit in leadership traits among the top leaders.
- Most senior HSE professionals felt that the HR department has outsourced all its duties.
- The safety department thinks about safety norms, but the management thinks about production.
- Mostly, the HR do not address this issue, as they are more inclined towards the management SEWA (servitude).
- Around 90% of the organisations perceived that everything is related to cost-saving for the companies.
- The EHS Corporate Director commented as follows:  
It is due to incompetency of safety professionals also who sometimes are not having courage to justify need of safety improvement. A true safety professional can drive safety as value to business before anyone else. However, mantra is the receptive management has to acknowledge the value and extend support by owning the responsibility of driving safety like any other function.
- An AMNS safety professional underlined that management does not want safety culture solutions as part of safe production, and the HR department wants to realise that safety culture is a part of their responsibilities as well.
- ONGC feels that it is a big question. May be “Boss is boss” culture.

A multinational company’s head emphasised that the world is constantly changing and safety is no different. The world is moving from industrial safety to a new view of safety. Concepts like human factors, human performance, psychological safety, and so on, are new areas. Safety

professionals are not trained on these perspectives of HSE. The job profile of the HSE professionals seems to be changing globally, requiring a new set of skills (Burdick, 2019). To update competencies for safety culture, a BBS course by NITIE was initiated recently in 2021. Nearly 30 organisations across India, with 110 participants, have shown positive changes in the safety culture in data form, as they implemented BBS.

### **Theme 8: Major Roadblocks in HSE Decision-Making**

Is management the biggest roadblock to safety? Sometimes, companies stash their safety programmes, rather than actively prioritising it within the work operations. Safety professionals get frustrated when companies mistreat safety; then, the safety professionals are not to be made the scapegoat (MySafetySign, 2021).

What are the major roadblocks in HSE decision-making in Indian corporates? The safety decisions depend upon procedures of finance, HR, procurement, site management, HODs, the safety department, and so on. Most of these people are not safety-sensitive due to cultural and educational backgrounds in which HSE is not emphasised. Hence, the decisions are delayed, and many people die or are disabled due to a lack of supportive or proactive safety culture at the sites. HODs need to watch the at-risk behaviours metre daily and discuss with fellow employees to control such behaviours (Kaila, 2021). An Afcons site professional says, it is very true, but rarely happens. A Thermax safety professional found the HODs' behaviour to be at-risk behaviours in some places.

Maintaining the best quality of long-term safety culture is a continuous journey between the management and the people at the sites. It is good for the health of the business. The positive outcome on safety requires sincere practice by all concerned. If business leaders do not keep safety ahead of business operations, they would find it extremely difficult to save their business and the people from incidents. In addition, HODs passing the buck to area heads, area in-charge to section heads, and so on, would trouble the safety culture of the organisations.

Some so-called BBS experts try to teach behavioural safety culture in a confused manner, as they are not clear about the fundamentals of the BBS approach of behavioural science. This tends to give the wrong message

to organisations about what BBS is and what it is not, and how to implement it scientifically. In behavioural safety implementation, we need just five minutes of everyone's time, from the MD to the last person at the sites. This magic number of five minutes (multiplied by the number of employees and associates each day) changes the entire arithmetic of safety culture and businesses of our corporates. The best observer is the one who also looks at his/her own unsafe behaviour and spot-corrects it. The BBS journey is good for the company's financial safety, as it helps say goodbye to incidents' cost, compensation, and cases, and adds relief to the management. When everyone reaches home without any injury, it is called a safe workplace. Do not let the risk become an incident; only you can prevent it as the Baddi Behan/Badda Bhai (Big sister/Big brother) of safety (Kaila, 2021). Companies need to develop BBS as SOP.

### **Theme 9: Spot-Implementation of BBS Approach by Top Leaders**

The critical question remains: how quickly can the safety culture be inculcated to save all at work? It requires a very courageous, fast-track leadership to reinforce spot-implementation of the BBS approach for quick results of long-term safety culture at sites. We cannot afford slow action on safety culture implementation for managing at-risk behaviours with serious implications.

The chairperson's recorded voice (BBS) message for daily announcements over the public address system at the sites: Dear colleagues and contractor associates, "Kindly observe at your work area, if anyone is doing unsafe behaviour, please speak up and spot-correct the person as you are trained in a big brother safety approach". This facilitates spot-implementation of BBS.

Retaining people's trust in BBS to rebuilding safety culture is a collective effort at the sites. Zero-harm is possible with continuous innovation in safety culture improvements. What eyes see, prepare the mindset backup. So keep increasing the percentage of safe behaviours to show to people to go down their mindset.

### **Theme 10: How Should We Fast-Track the Supportive Safety Culture Implementation at Sites?**

In this regard, this research made a host of

recommendations: make HODs as drivers of safety culture from the beginning; BBS indicators should be one of the performance evaluation parameters of each individual at the sites (part of each individual's KPI), but with proper mentorship by experts, so there is a need to develop a network of experts; make BBS a part of KRA/annual objectives for everyone; place weightage on performance deliverables; discuss daily hurdles on incidents/unsafe behaviours; reward mentors and followers; and above all, drive and commitment/zero-tolerance from the top management, specifically from the promoters. Set examples by taking disciplinary actions on violations; stick to the philosophy that if one person from a specific unit does not follow the protocols, it will be judged as a mistake made by the entire unit. According to Aakash Thakur, Vice President of a large group of chemical units, "I have even implemented these concepts in one of the retail organisations during my stint at Middle East". The best thing could be through observations at site and interacting with team leaders and the senior-most (CEO, MD, or an investor directly) employees. Further, portals or software to manage behavioural data should be available, preferably either an android-/IOS-based mobile app, which should have the facility to upload site observations for immediate implementation under the guidance of the top management. Setting targets and putting behavioural observation targets as individual key value drivers, visible leadership of project manager, and weekly review and monitoring from the headquarters should be carried out. As the first step, diagnosis of the organisational culture must be done. If we find a positive safety culture prevailing in the organisation, then we will proceed to implement BBS, and chances of success will be high. Increasing the number of competent observers and on-the-spot corrections on every shift will be an effective solution. It should be started with all HODs; observers should cover every square inch of the plant premises. Each meeting may start with sharing of observations. The first three minutes may be dedicated to observations. Monitoring the progress, and providing feedback to the BBS champion, as well as an award-and-reward system should be followed. We should start with the senior management, because in many cases it is considered an enforcement formality instead of as part of the business. Involvement of the workmen who contribute to 60% of the manpower, and their observers and coordinators would keep track of each and every activity in the plant; this serves as a two-tier system. A crash-course on supportive safety culture in the

presence of top management should be provided. There should be a stringent written policy signed by the top management, which is read, understood, and signed by all the employees and the contractors. Safety culture should be included as part of site safety induction, and more promotional activities such as weekly rewards should be considered. A write-up on contract specifications about the BBS should also be included. There should be scaled-up involvement of employee participation. One thing that is noticed is that the workforce prefer an informal way of communication, rather than formal communication like a suggestion box. So, many sites have suggestion boxes biting the dust, as informal ways of communication is preferred largely by the workforce. We have to develop the mechanism for employees to express themselves freely; without their active participation, we cannot take the safety culture movement forwards. To sensitise people, reward in terms of annual increments, which will include individual BBS scores of every person, should be considered; every event and function should start with a BBS talk; the 12 behaviours checklist should be displayed on every possible document, desktop, and boards, and be advertised the most, to make people aware at each and every step. Finally, safety culture is like the birth of a baby; one needs to have patience. However, one can facilitate the process, as expressed by the Director, EHS, of DCM Shriram. The HSE heads of a green infra and chemical multinationals, Robin Barboza and Avinash Shinde, believed that regular intervention of the management, as well as sensitising the workforce during the daily tool-box talk and meetings with a friendly approach, and observing safety behaviours on site, have fast-tracked the safety culture of their companies. In view of the award recognition for safety culture promotion in his organisation, the GM EHS, Mr. Indranil Chakraborty, stated, "This will definitely motivate me to further enhance and strengthen the behavioural safety culture not only in my organisation but also in the society and my surroundings". HSE as a planned intervention is to be included into CSR initiatives by organisations, to make safety culture a way of life. The trained behavioural safety observer does not limit himself/herself to the site; rather they should make one observation daily at the site, as well as outside the site, to make society also safer.

## Conclusions and Recommendations

After three years of implementation of behavioural safety

culture management, Pavan Rao of Sembcorp emphasised that they will remove PPE from the observation checklist and make it as a consequence management. PPE will be replaced with the presence of barriers (administrative or engineering) while work is being performed. Changing the safety culture involves a systematic process of measurement, identifying strengths and weaknesses, deploying targeted interventions, and learning from the results, to set the stage for continual improvement (Ravi et al., 2021). Ten themes of this research findings reflected upon critical issues such as clarity about the fundamentals of long-term safety culture; following the reactive safety culture; promoting collective voices and leadership for spot-correction of at-risk behaviours; respect for religion, spirituality, and festivities for safety at sites; BBS as an implementation of safety with feeling for others; understanding the features of companies not empowering the workforce for safety implementation and preparing an action plan; resolving competency gap among the safety professionals, overcoming the major roadblocks in HSE decision-making at sites, and spot-implementation of the BBS approach by top leaders; and the factors to advance the success of long-term supportive safety culture.

What is influencing employees to engage in at-risk behaviours is the company culture, as culture drives behaviour. Hence, there is a need to buy-in employees into the supportive safety culture, and integrate it into safety management policies and procedures. There has to be easy-to-implement ways to prevent damage to HSE. Psychology applications have remarkably increased safety culture at sites, along with carefully monitoring behavioural risk trends backed by HSE systems with deep management commitment. In public sector companies, behavioural safety approach has become a key area. The unfortunate fact is that people take safety certificates, but do not practice it. We have to understand that the impact of behavioural safety management is scattered across departments. So there is need to motivate, recognise, and monitor people across the board. BBS fills all loopholes in HSE systems by involving people across the work areas. HSE standards are there, but there is a need to prevent the cancer of fatalities at construction sites. There is a need to touch hearts and minds, both by the management as well as the peers, whereby everybody becomes an ambassador of safety by sharing examples. Most people thought that accidents would not happen to them, but it happened. So there is need to lead, rather than lag, in following socially appropriate behaviours. Awareness is the first step. BBS creates antecedents which encourage people to behave

safely, with high-impact observations.

Further, little is known about the necessary competencies and proficiencies for safety officers. Regulatory compliance was assessed as the most important competency. Gaps between necessity and proficiency were observed in managing safety programmes for the junior group. The results indicate that the safety officers' training needs may be particularly high for regulatory compliance, managing safety programmes, and mental health. Lifelong learning is important for enabling occupational safety and health practitioners to fulfil current requirements. Multiple training approaches may encourage competency development, especially for junior safety practitioners (Ishimaru et al., 2020). The gaps always existed on the competencies of safety professionals, as the basic training at the colleges is minimal, to develop further on the job competencies, individual experiences, and performances. The above perspectives of the Indian safety professionals recommend these gaps to be addressed on the behavioural safety approach, to assess an organisation's projected safety performance based on current behaviours' safety index at sites.

Companies aimed to satisfy only legal/compliance requirements. Companies are made to understand by HR professionals that safety is a common subject, everyone can talk about it, and that safety is to be managed. Law is to be complied. It is always the HR/IR team which handles the compliance with authorities. So they satisfy them with numbers (as per the law). As long as safety is managed, i.e., complied with, these gaps will continue. When safety becomes a commitment for the leadership, every employee leads the company towards a 'no hurt, no harm' policy.

Sincerity and responsibility for safety culture is needed. Most of the leaders and safety professionals at sites do not want to go the extra mile; they only try to show that they are doing many things. However, it does not change the end result. There are very few competent HSE manpower, and under pressure to fill the vacancy, they just want to fill the gaps. They are not interested in checking/improving competency. The National Safety Council needs to address this issue of competency gap among the corporate HSE professionals through awareness and capacity building by conducting conferences. We need to speak about it at forums. Moreover, the safety professionals do not make the organisational decisions that have the most impact on

the safety at work. These decisions are made by managers and frontline employees. Our impact on the safety at work is through relationships, communication, and influence; people generally only listen to the people they like and with whom they have an emotional connection.

Three things fail the behavioural safety culture practices:

- Managements leave focus in-between while developing safety culture.
- BBS does not reach the last person at the site.
- Observers feel disconnected with the EHS management.

Solutions are found over the years in:

- Continued effort in BBS concepts clarity.
- Continued retraining of more observers.
- Continued rewarding of observers at sites.

Observers at sites are connected to people faster when they tender unconditional support during the process of risk-correction, with empathy and personal example. Mr. A S Reddy, a safety professional, believed that there is a need to strengthen every capable citizen to serve as a philanthropist, to bring up the nation in all respects. The critical query remains that, is the world of safety actually a last subject in organisations and our society, or is it dealt with as a smart lip-service. Looking at the reality by way of behavioural criteria is important for the industry and social science professionals. Spot-correction of at-risk behaviours and spot-implementation of behavioural safety concepts and applications are needed by all concerned for long-term changes in safety culture, using proven predictors of team effectiveness, i.e. psychological safety perspectives that extend beyond the work content to include broad aspects of employees' personal circumstances and experiences (Edmondson & Mortensen, 2021), and including psychosocial risks that affect the psychological health of people (ISO 45003, 2021). Finally, safety culture embodies a mission and personality orientation of leaders from the workplace to every place, which also requires an understanding of current trends in supportive safety culture conceptualisation and interventions by the organisations and the employers.

McKinsey reported that organisations attempting to shape safety culture place too much emphasis on tools and processes, and pay insufficient attention to the underlying employee mind-set that shapes personal-safety behaviours

and interactions (Hortense de la Boutetière, 2019). Below are a few of these behaviours that are often repeated, but nothing is done about them; this fast-tracked the safety culture in industry.

- Leaders' interactions on the shop floor, with all levels of employees (personal and professional).
- Field rounds by all level of managers and field rounds by representatives from the work force.
- Having an open mind to listen to the shortcomings and concerns from the shop floor employees (Fix them and communicate to them directly).
- Reward and recognition (in public).
- Appointing a team responsible for initiation and implementation.
- Aligning senior management with the BBS vision.
- Regular review meetings, trainings, retraining, and motivational rewards.
- Involving business partners.
- Safety observations should not dip.
- Near-miss reporting to increase.
- Consider safe observations and global spot-correction of at-risk behaviours.
- Incident reduction to focus.
- Proactive compliances to exemplify.
- Reaction of people to be respected.
- Managers must ensure to match higher targets, deadlines, and safety behaviours.

Business excellence is not achievable without safety culture excellence, and the safety-time seems to be the best indicator of how much safety culture has evolved in the company by its people, by the daily contribution of an observation round. So if you need to fast-track building the safety culture, increase the safety time of your employees and associates. The possibility of injuries and incidents at site can be proportionately equaled to the active safety time of observations and spot-corrections (Kaila, 2020). Fast-tracking supportive safety culture at sites and fixing critical issues to not face incidents, in brief, mean to actively engage daily in caring, and importantly, praying for human life at all places. Unsafe conditions, barriers, and risks are everywhere, and manageable, if people behave safely, and regularly alert and connect with others as brothers and sisters of safety, health, and environment. This means that the positive behavioural approach is valued and exercised daily by

everyone in society and industry towards a common goal of building a supportive safety culture that provides a sense of well-being and a safe environment. Fast-tracking supportive safety culture at sites would push business excellence to the next level, whereas the absence of it has the potential to damage the business. Every person, from the supervisor to the manager has to be made safety-conscious, responsible, and accountable. This is achievable when people are intensely sensitised to care for human life with compassion. It should be demonstrated by example; some people come to the site without the basic PPE. They teach lessons/try to implement a safety culture; however, when workers sense that it is fake, we get a similar response, in the form of silence. Brief mechanics

of the fast-track safety culture include the following: behavioural safety training cum survey is completed to discern the percentage of at-risk behaviours; plant head issues BBS implementation circulars to all; on the same day that the circular is distributed, all HODs conduct a mass communication (Fig. 3 and 4) at the sites; daily display of at-risk behaviours in the plant as a proactive practice, HODs take reverse TBT daily; monthly progress review is carried out, bridging the gap between corporate/site safety culture; and so on. In brief, saving people from incidents is to save time for spot-correction. If you are wasting time in spot-correction of at-risk behaviours, you are on the road to wasting business time as well.



**Fig. 3: Mass Communication at Site**



**Fig. 4: Mass Communication at Site**

The appreciable case points of some large Indian companies' behavioural safety supportive culture as a long-term planned intervention include: best managing director's personal engagement at Galaxy Surfactants, best EHS Director's drive at DCM Shriram, best challenges and cooperation at GAIL, best analysis management at Sembcorp Energy, fastest implementation at SAIL, best

self-driven project at HPCL, best continuing efforts at Larsen & Toubro, and large coverage at Tata Projects, AFCONS, Aarti-industries, Vedanta, and IOCL. Other companies that initiated safety culture movement, yet need to fast-track it as a business strategy, include ITC, RIL, Colourtex, Everest, Reliance Energy, Ultratech, CFCL, Sandoz, M&M, BPCL, ONGC, Suzlon, TUV, DNV,

Bajaj Auto, Bayer CropScience, Serum, SMC, NPC, GE, BHEL, Oil India, Privi, HCC, Kalpatru, Torrent, CTEA, Greentech, ICC, Pidilite, Volkswagen, Jindal, Sterlite, RCF, Solaris, Agrocet, Piramal, Dorf Ketal, TRL Krosaki, Uflex, AM/NS, Hikal, Sunshield, Gunnebo, Amara-Raja, Hindalco, Ampacet, Toyota, NTPC, Vaaman, Baerlocher, Gharda, CPCL, Godrej, Hirschvogel, Asian Paints, Vasudha, and Thyssenkrupp. We wish to see revolution in safety culture of all organisations as a business goal, achieving zero-harm and so on.

National safety culture depends upon the safety response of the citizens. If a large number of citizens anywhere behave safely and responsibly, we call it a safe culture. If we have to improve the safety culture, we have to respond to how people around us are behaving. When everyone speaks up and responds to unsafe or at-risk behaviours, it is our collective response which decides the safety culture of that place. Especially during the existing scenario of COVID-19, our safety response is vital to increase the quality of HSE culture. Let us take oaths that we shall individually take the responsibility of behaving safely, and ensure that people around us also behave safely. If not, we shall speak up with respect and patience till the time people have learned or modified their behavioural safety response. One person's care is another person's safety. One observation a day keeps the risk away. Hence, our response would decide the safety culture of our company, community, family, city, nation, and the globe. In India, the population is 130 crores; every day we can achieve 130 crore safe behaviours in our public, if we just look around and reinforce safety responses positively. Top leaders in educational, industrial, and other institutions should make daily compassionate appeals to their masses to reinforce safe behaviours and spot-correct at-risk behaviours among students, employees, and so on. Almost 75% of the people around us are already behaving safely; they need to remind the remaining 25% to behave safely on a daily basis, during their interactions with them in the workplaces, on the roads, in residential buildings, and so on. Their immediate safety responses depend upon the ingenuity, as well as the number of risk-based-conversations with them. This necessitates the role of every citizen in fast-tracking safety culture to save lives. Each citizen needs to be very sensitive about the risk perception, as well as the risk communication in his/her daily environment.

Support the safe culture,  
Don't ignore the unsafe,  
Correct it on-the-spot,  
Be a proud citizen,

Become a big brother of safety and society!

Safety starts from us, but it begins with you!

Develop leaders of safety culture to sustain in society.

Choueiri (2021) concluded that individuals, organisations, and the economy, all suffer when workplace hazards are ignored. Hence, safety culture efforts would save all these in the long run in the wider interest of our societies. Safety culture is considered successful when it becomes a value system, and everyone values and speaks up for the safety of each other. The theme of the National Safety Day 2022 is to “Ensure integration of OSH in work culture and lifestyle”, which is precisely ‘safety in the behaviour of everyone’ to be ensured at the workplace and everywhere. The benefits of safety culture must go to every citizen or workmen.

## Acknowledgment

Contribution of all industry professionals is thankfully acknowledged.

## References

- Barnes, E. (2021, June 15). NSC National Safety Month 2021: Week 3 – It's vital to feel safe on the job. Retrieved November 25, 2021, from <https://www.ehs.com/2021/06/nsc-national-safety-month-2021-week-3-its-vital-to-feel-safe-on-the-job/>
- Boutetière, H. D. L., Rousseau, J. B. G., & Turnbull, E. (2019, May, 21). Overcoming limiting mind-sets to improve safety. Retrieved from <https://www.mckinsey.com/business-functions/people-and-organizational-performance/our-insights/overcoming-limiting-mind-sets-to-improve-safety>
- Burdick, G. (2019, May 13). Big growth and change expected for the safety profession. Retrieved November 23, 2021, from <https://ehsdailyadvisor.blr.com/2019/05/big-growth-and-change-expected-for-the-safety-profession/>
- Choueiri, E. M. (2021, December). Individuals, organizations, and the economy: All suffer when workplace hazards are ignored! *World Safety Journal*, 30(4), 67. doi:<https://doi.org/10.5281/zenodo.5865442>

- Edmondson, A. C., & Mortensen, M. (2021, April 19). What psychological safety looks like in a hybrid workplace. Retrieved November 22, 2021, from <https://hbr.org/2021/04/what-psychological-safety-looks-like-in-a-hybrid-workplace>
- Halligan, M., Zecevic, A., Kothari, A., Salmoni, A., & Orchard, T. (2013). Understanding safety culture in long-term care: A case study. *Journal of Patient Safety, 10*(4).doi:10.1097/PTS.0b013e31829d4ae7
- Harbans, H. L. (2021). Why industry is losing faith in HSE awards?: Professionals rethink. *IJTD, 51*(1), 82-90.
- Ishimaru, T., Punpeng, T., Maiyapakdee, C., Ketsakorn, A., Fujino, Y., & Hara, K. (2020). Survey of the necessary competencies and proficiency of safety officers in Thailand. *Industrial Health, 58*. doi:10.2486/indhealth.2019-0205
- ISHN. (2021, October 7). How does your safety culture impact workers? Retrieved November 22, 2021, from <https://www.ishn.com/articles/113124-how-do-es-your-safety-culture-impact-workers>
- ISHN. (2021, December 2). A young pro and his mentor address safety culture engagement – Delivering safety excellence. Retrieved November 23, 2021, from <https://www.ishn.com/articles/113172-a-young-pro-and-his-mentor-address-safety-culture-engagement>
- ISO 45003:2021. (2021). Occupational health and safety management – Psychological health and safety at work – Guidelines for managing psychosocial risks. Retrieved from <https://www.iso.org/obp/ui/#iso:std:iso:45003:ed-1:v1:en>
- Kaila, H. L. (2020). Planned intervention of behaviour-based safety (BBS) helps organisations improve their safety time arithmetic. *World Safety Journal, 29*(3), 34-41.
- Kaila, H. L. (2021). Behavioural benchmarking as a robust tool of total safety culture in industries. *The Journal of Insurance Institute of India, 9*(1), 82-88.
- Keenan, P. M. (2017, March 11). Spiritual vulnerability, spiritual risk and spiritual safety – In answer to a question: ‘Why is spirituality important within health and social care? At the Second International Spirituality in Healthcare Conference 2016: Nurturing the Spirit.’ Trinity College Dublin, The University of Dublin. *Religions, 8*(3), 38. Retrieved from <https://www.mdpi.com/2077-1444/8/3/38>
- MySafetySign. (2021). Is management the biggest roadblock to safety? Retrieved November 29, 2021, from <https://www.mysafetysign.com/blog/roadblock-to-safety-programs/>
- Paoletta, D. (2020, July 1). Core attributes of a world-class safety culture. Retrieved November 29, 2021, from <https://safesitehq.com/safety-culture/>
- Pettinger, C. (2020, August 25). 5 ways to build a culture of safety for the long term. Retrieved November 23, 2021, from <https://www.ehstoday.com/safety-leadership/article/21140054/5-ways-to-build-a-culture-of-safety-for-the-long-term>
- Ravi, D., Tawfik, D. S., Sexton, J. B., & Profit, J. (2021). Changing safety culture. *Journal of Perinatology, 41*, 2552-2560. doi:<https://doi.org/10.1038/s41372-020-00839-0>
- SHRM. (2020, September 8). Accommodating religion, belief and spirituality in the workplace. Retrieved November 24, 2021, from <https://www.shrm.org/resourcesandtools/tools-and-samples/toolkits/pages/accommodating-religion,-belief-and-spirituality-in-the-workplace.aspx>
- Urbach, T., & Fay, D. (2020, February 21). Leader member exchange in leaders’ support for voice: Good relationships matter in situations of power threat. doi:<https://doi.org/10.1111/apps.12245>
- Veľas, A., Halaj, M., Hofreiter, L., Kampová, K., Zvaková, Z., & Jankura, R. (2021). Research of security and safety culture within an organization. The case study within the Slovak Republic. *Security Journal*. doi:<https://doi.org/10.1057/s41284-021-00291-5>
- Vos, J. (2021, April 12). Empower your employees to create a culture of safety: Here’s how. Retrieved November 27, 2021, from <https://www.aem.org/news/empower-your-employees-to-create-a-culture-of-safety-heres-how>
- Williams, O. (2021, September 1). Strengthen your safety culture. Retrieved November 28, 2021, from <https://www.ioshmagazine.com/2021/09/01/strengthen-your-safety-culture>