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AHP method for selecting the best strategy to Enhance Safety Culture
A Case study at “XYZ” Company in Qatar

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ABSTRACT

Lack of safety culture awareness in the ambulance services affects not only locally but internationally in different countries, including at "XYZ" a company in Qatar. Many studies mentioned about risks and hazards associated with ambulance services that result from illnesses, accidents, or property damaged because of a lack of safety culture. The results of the safety culture survey in ambulance service of XYZ Company were showing less of commitment and involvement of ambulance personnel to safety 52.6% and less motivation 57.9%. It supports by the achievement of key performance index of ambulance services that was 85 % – 96 % from the target. This paper discussed a strategy to improve safety culture in ambulance services. The authors conducted a research study utilizing the AHP method to select the best approach by following the real condition. This study compares the essential factors in improving safety culture based on eight criteria and three strategies safety climate which the result shows that (a) The commitment of senior management with a value of 0.247 or (247%), and (b) Operational approach strategy with a value of 0.386 or (38.6%), with CR of 0.03 are among the top priorities needed in the operational of ambulance services to run optimally.

Keywords: Safety Culture, Ambulance Service, AHP

Introduction

Indicators of a good safety culture in an organization can result from various factors like as good safety commitment from top management and employees, compliance with policies and regulations, quality services and professionalism or the existence of a safety system in the organization. However but, most of the people will see from the number of accidents and illnesses that occur in the organization. (Strank, 2007). This perception applies equally to all organizations or agencies, including ambulance services.

Ambulance service is one of the core businesses in health services in the modern era. Safety concerns in ambulance services are mandatory while delivering services. Failure to provide optimal services and develop an ambdo, it will be led to risks, hazard, and the incident and accident into the ambulance personnel and patients (Sanders, 2018).

Commonly, factors are causing failure to provide high quality and excellent safety performance in ambulance services such as physical and psychological condition,

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46 professionalism, motivation and competence, work environment, weather, coworkers,
47 policy and finance problem. -Pattersen, Weaver, & Hostler, D., (2015) states, in addition
48 to physical risks, EMS personnel also experience psychological risks. Many EMS
49 personnel violate in written regulations, failed on procedures, stress, felt insomnia and
50 exhausted and have no commitment to the profession ref(Wankhade, Jones, 2015).
51 Uncontrolled and unpredictable environmental conditions, lack of supervision, limited
52 information and uncertainties that often linked as factors that contribute to increased
53 safety risks for patients in EMS services (Price, Bendall, Patterson, & Middleton. 2013).

54 Due to lack of the safety culture in ambulance service, it will leads high risk incident and
55 accident that it will be harmful to ambulance personal and patient ref. Generally, there
56 are two main risks and hazards of working in an ambulance ref. There are work related
57 illnesses and work related accidents. According the data Based on data from the NHTSA
58 agency period of 1999-2011, the number of accidents or collisions related to ambulance
59 every year is around 4500 cases, - 34% resulted in injuries and 33 people died ref. From
60 the data that died, 4% were ambulance drivers dead, 21% were ambulance passengers,
61 63% were passengers from other vehicles and 12% were pedestrians (NHTSA, 2012).

62 Researched by Yilmaz, Serinken, Dal, Yaylaci, & Serpil, (2016) in In Western Turkey,
63 regarding personnel ambulance accident, described: "The most accident happens in
64 ambulance service was motor vehicle accident (MVA) -It is around 31.9% -from a total
65 of 163 personnel injured, needle-stick injuries (16.0%) -ref. Needle stick injuries usually
66 occurred during intravenous line procedures (59.4%) and inside the cruising ambulance
67 (n=20; 62.5%). Working inside the ambulance was the most commonly accused cause of
68 the work related injury WRI (41.3%)(Yilmaz, Serinken, Dal, Yaylaci, & Serpil, 2016).
69 Lin, (2018) Isupported it in Taiwan -had been Among the 1,627,217 traffic accidents
70 during the study period, -715 involved the ambulance within 8 fatality and 1844 injured
71 patients, ATA's caused eight deaths within 24 hours and 1844 injured patients. On
72 average, there was one ambulance traffic accident ATA for every 8598 ambulance runs
73 ref. Compared to overall traffic accidents, ATA's were 1.7 times more likely to result in
74 death and 1.9 times more likely to have injured patients ref. Amid 715 ATA's, 8 (1.1%)
75 ATAs were fatal, and 707 (98.9%) were nonfatal" (Lin, 2018)ref.,

76 My impression to those incident and accident, due to the lack of the safety culture in
77 ambulance service, it was the high-risk incident and accident and harmful to ambulance
78 personal and patient.

80 Similarly, it also happened in the ambulance service at XYZ Company. In the 2013-2018
81 period, there were 4833 emergency calls. ref-Two thousand six hundred fifty-six calls
82 (55.5%) were related to patient management, and 45 % non-related. One hundred
83 seventeen cases (4.4%) were traffic accidents, 424 (16.0%) cases of trauma or injury,
84 2098 cases (79.0%) were medical, and 17 cases (0.6%) were dead on arrival ref(EMS
85 yearly report XYZ Company, 2018). Whereas, accidents related to ambulances or
86 involving ambulance personnel not appropriately recorded ref. There were 5 cases of
87 crashes involving ambulances, no casualty but caused ambulance damaged was high
88 costs repaired ref.

89 Based on data from occupational health (OH) clinic period of 2016 - 2018, there were 3
90 cases of ambulance personnel suffered low back pain and spinal cord injury due to faulty
91 in lifting, 1 case of small head injury and 1 case of heat exhaustion ref. Presentation by
92 Al-Jaidah, (2018) mentioned, "Number of sick leave during 2017 was high. OH
93 recorded, 1.55% (544 days) of health workers including ambulance personnel submitted
94 sick letters".

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96 | On annual report 2018 of safety performance reported, participate of providing incident
97 | or accident says in the health department of XYZ Company, especially ambulance
98 | services, was deficient~~ref~~. It was 16 reports during the 2013-2018 period ~~ref~~. 90% are
99 | related to patient management, and 10% similar to safety issues; unexpected events
100 | (KTD) and near misses (KNC).~~ref~~

101 | The National Patient Safety Agency, (2011) in Wankhade & Jones, (2015) mentions
102 | complex problems in the provision of ambulance services and related processes, as risk
103 | factors for quality service failures. The risk and hazard in ambulance service are difficult
104 | to avoid because of the environment condition and the nature of work itself, but it can be
105 | reduced or minimized as little as possible by efforts to enhance occupational health and
106 | safety system with increasing promoting strategy through the development of a safety
107 | culture in the work environment.

108 | Based on the description above, the author is interested in researching the strategy to
109 | enhance safety culture at the ambulance service of the XYZ Company in Qatar. The
110 | primary purpose of this research is to analyze existing problems, formulate priority
111 | strategies and build up a model for strengthening the safety culture in ambulance services
112 | at XYZ Company. Building a safety culture in ambulance services or organizations is
113 | fundamental. A positive safety culture influenced by organizational performance and
114 | safety management performance.

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Comment [CH2]: Introduction revised

115 | 116 | **Literature Review**

117 |
118 | In the United States of America or most Europe countries, ambulance services were
119 | called Emergency Medical Services - (EMS) (Platt, Stoy, & Lejeune, 2011, p.2). ~~ref~~.
120 | EMS is an ambulance service system in terms of emergency services integrated in terms
121 | of facilities, professional personnel and management systems that are standardized both
122 | nationally and internationally (Platt, Stoy, & Lejeune, 2011p.5). Principally, EMS
123 | practitioners have some responsibility as well as another health practitioner in the
124 | hospital to provide established high-quality health services to the patient but more focus
125 | on pre-hospital management before the patient sends to the hospital (~~pref~~.6).

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126 |
127 | To maintain and improve the care of patients, systematic documentation and periodic
128 | audits, or other processes to ensure the quality of care, need to be incorporated, "Quality
129 | management systems that are simple, are continuous, and allow for rapid changes in the
130 | system need to be implemented" (Jones, 2015) in (Wankhade & Jones, 2015). The safety
131 | and quality management in the ambulance became a priority and essential because a lack of
132 | supervision in safety will be led to an accident, loss of property damage, social
133 | problem and protection for the personnel and patient. The Berwick Report (DH 2013) in
134 | Pattersen, Weaver, & Hostler, (2015) explained, what steps to be required to improve
135 | patient safety: "Identifying that incorrect organizational priority, systems, environmental
136 | factors, and culture were contributory factors in failing to learn and in failing to protect
137 | patients from harm". The management of quality risks within ambulance services
138 | presents significant challenges due to the unique environment they operate within (Brice,
139 | Studnek, Bigham, Martin, Gustalow, Hawkins, & Morrison, (2012). In this view, we
140 | should eliminate the risk factors and enhancing the safety culture in the ambulance to
141 | maintain the services and protect all parties involved in ambulance services, including
142 | personnel and patient~~ref~~.

143
144 What is the safety culture means and how's to enhance safety culture? Confederation of
145 British Industry (CBI, 1991) defines "culture" is the way we do things around here".
146 Stranks, (2007, p.354) described as "a state of manners, taste and intellectual
147 development of mind, tastes, etc. by education and training." The Department of Mine,
148 Industry Regulation and Safety of Western Australia defined "the safety and health
149 culture of an organization is a reflection of the values, attitudes, perceptions,
150 competencies, and behaviors of the people working there (WHSQ, 2013). It reflects the
151 organization's commitment to, and prioritization of, safety and health as well as the
152 effectiveness of the organization's safety management system_(p.359). The elements of a
153 safety and health culture organized into three categories: a)- Organizational. It includes
154 policies, procedures, and systems that relate to safety and health. b)- Psychological,
155 involving individual perceptions, attitudes, and values. c)- Behavioral, what people do,
156 health, and safety behaviors_(Cooper,2001). King (2013) Identified two distinct while
157 developing a safety culture within the organization: a)- A transformation of systems,
158 leadership, and organizational culture. b)- The administration created the conditions in
159 which high standards of care are delivered consistently, setting clear goals and standards
160 for improving quality and patient safety, and providing the tools for staff to address these
161 goals within available resources.

162
163 In building a safety management system in adhering to a high quality in the ambulance
164 service based on the enhancement of safety culture within the organization, there is some
165 indicator that needs to follow. The cultural symbols utilized in many aspects of activities
166 found within the organizations (Stranks, 2007, p.354). It is how to measures specific
167 features of a particular culture of the people or group of the people when they are doing
168 communication, transaction, or other business_(Cooper, 2001). Stranks, (2007, p.355) On
169 human factors and behavior, safety said: "cultural indicators linked with Key
170 Performance Indicators (KPI) and Success Criteria (Acceptance Criteria)." Within an
171 organization, cultural indicators include a)-Degree of loyalty and commitment displayed
172 by all levels of the workforce. b)- Presence of shared goals with specific signs. c).
173 Policies and procedures. d)- Evidence of fair and effective management systems. e)
174 -Investment in people (Training, frequent information) f)-Investment in Technology. g)-
175 Compliance with a legal requirement. Personal integrity at all levels. h)- System for
176 communication both within and in our organization. i)- A well-written mission statement.
177 And j)- A publicized reward structure that rewards high levels of performance. The
178 organization operational and safety performance will influence those indicators. The
179 indicator shows, the critical thing of build up a system and human resources as well to
180 get a positive culture in the workplace and it is the best way to have greatest impact on
181 the reduction of accident and ill health (p.355). In the meantime, in the context of
182 ambulance operational, the commitment from executive or top management are very
183 significant because it is related to vision and mission, value, financing, and build up a
184 system (Wankahade & Jones, 2015).Figure 1.1 below is a theoretical framework of the
185 strategy to enhance safety culture at the ambulance service of XYZ Company.

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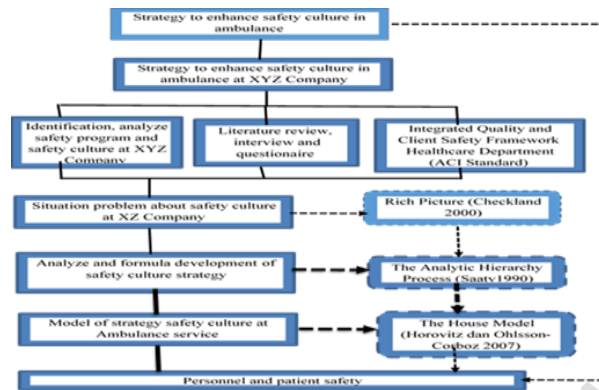


Figure 1.1: Theoretical framework of strategy to enhance safety culture at ambulance service in XYZ Company Qatar

Methods

This type of research is conceptual research, which is research related to an idea or theory that might be applied, with a system approach. The theoretical research that [the researcher](#) did was a concept, design, or strategy to improve safety culture at the ambulance service of XYZ Company in Qatar. The study conducted from March 2019-up to July 2019 at XYZ Company.

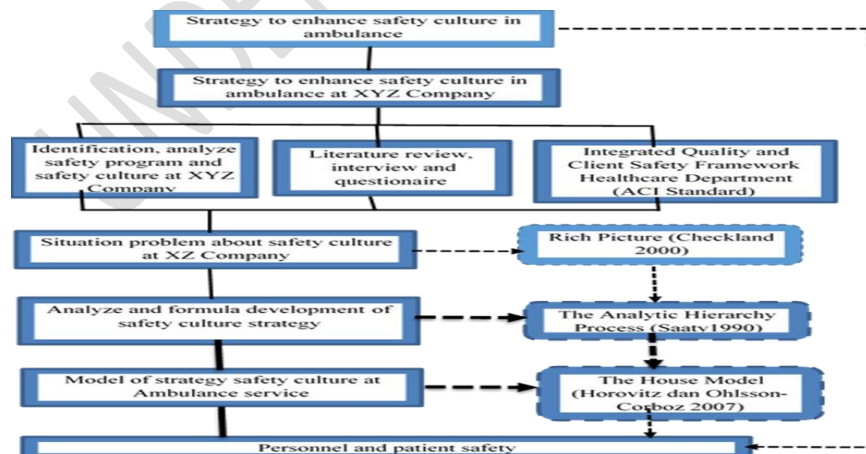


Figure 1.1: Theoretical framework of strategy to enhance safety culture at ambulance service in XYZ Company Qatar

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204 | Descriptive analysis is used to analyze data by describing the data collected without the
205 | intention to create a generally applicable conclusion — the systematical data found by
206 | interview results, observation, documentation, and survey. Descriptive analysis was used
207 | to describe problems, risk factors regarding safety culture at ambulance services of XYZ
208 | Company. After the study results well explained, the problematic situation described
209 | with Rich Picture.

210 |
211 | In this research, the author compiles primary and secondary data. Primary data collected
212 | with the observation method, in-depth interview with the expert, who directly concerns
213 | in enhance of safety culture in the ambulance services. In this research, choosing the
214 | experts are used non-probability method and to collect data are used purposive sampling
215 | technique. The primary data is used to obtain the information, assessment quality,
216 | objective, and measurement of formulation strategies for enhancing safety in the
217 | ambulance services of XYZ Company. The rest, secondary data taken from internal data
218 | of XYZ Company, statistic, and yearly report, books, relevant websites, thesis, and the
219 | related journals.

220 |
221 | Data analysis methods used in this research were descriptive analysis, utilization of
222 | questionnaire safety culture as tools analysis with SPSS25, Soft System Methodology
223 | based Rich Picture (Checkland, 1999), AHP (Saaty & Vargas, 2012) in (Kholil, 2018),
224 | and The House Model (Horovitz & Ohlson, 2007). By using AHP, the best choice
225 | according to the objective condition determined (Kholil, Susanti, & Soechayadi, 2016).
226 | The judgment from experts ~~will be were~~ analyzed and arranged appropriately by Expert
227 | Choice 2.0 software (Expert Choice, 2004) and presented with the house model. In this
228 | research, five experts ~~are were~~ involved. The expert for this research ~~is was~~ two
229 | ambulance practitioners at XYZ Company, one direct supervisor from management, one
230 | from business, health and quality section (BHQ) as an auditor and one academician
231 | including practicing in occupational and health and safety. The AHP process seen in
232 | Figure 1.2.

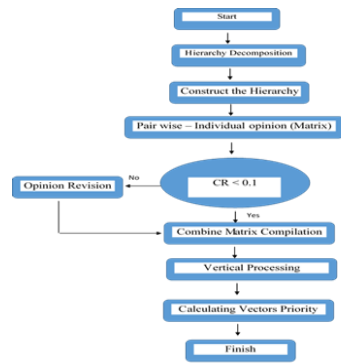


Figure 1.2: AHP Process

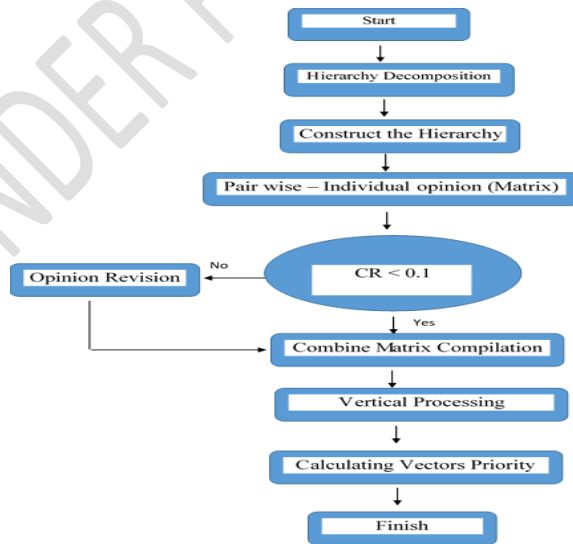


Figure 1.2: AHP Process

Results and Discussion

260 *Brief view of OH&S program and safety culture at ambulance service in XYZ*
 261 *Company Qatar*

262

263 The XYZ Company is engaged in oil and gas. As a state-owned company with
 264 international tenure, the viability of a safety management system in the company
 265 mandates and must be in operation [ref](#). One standard that must be met by the company is
 266 to provide a plan and emergency response system to deal with emergency conditions and
 267 situations [ref](#). Ambulance service is one component in the emergency response system
 268 [ref](#). The ambulance service at XYZ Company operates 24 hours, 7/28 with a fleet of 4
 269 units with a total of 39 personnel from several different countries. Operationally, the
 270 ambulance service provides emergency services for all employees in the industrial area,
 271 neither for XYZ employees itself nor contractors and subcontractors.

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273 Officially, the company have been received ISO 9001-2015 and ACI "Diamond" Level
 274 (Accreditation Canada International) for Quality services, but not yet synchronized with
 275 implementation at ambulance services.

276

277 Table 1.1: ACI – Accreditation Canadian International Program.

278

Category	Goal
Safety Culture	Building a culture of safety in the company
Communication	Improve communication and coordination in services and service providers and service recipients
Medicines Dispensing	Make sure you use drugs at risk
Work Environment	Establish a safe place and work environment in providing services
Infection Control	Decreases and minimizes the risk of disease due to service to service personnel
Risk Analysis	Identify risks to clients and employees

279 Source: ACI manual book 2018 XYZ Company.

280

281

282 Management's commitment to safety seen in the form of the BHQ division (Business,
 283 Healthcare, and Quality). "The BHQ team is responsible for the direction and
 284 implementation of the management functions of compliance with procedures, service
 285 quality, health risks in the work environment of the company clinic and ambulance". The
 286 focus and responsibilities are "on improving quality, effective health risk management
 287 and compliance with national health regulations to improve the health values of XYZ
 288 companies and employees following health terms and standards, good service and cost-
 289 effectiveness."

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291 OH&S's Company strategies and objectives are as follows:

- 292 a. Improve the performance of the health system and service delivery (ensuring the
 293 reach of health services that are accessible and sustainable according to the needs of
 294 XYZ company employees and work partners and other stakeholders).

- 295 b. Safety, quality and client satisfaction (providing integrated, safe, high-quality health
296 services to improve the physical and mental health and well-being of clients).
297 c. Occupational health services and collaborative support (providing world-class
298 occupational health services for XYZ company employees and collaborative support
299 to internal and external stakeholders.)
300 d. Professional development (ensuring and maintaining a competent workforce through
301 the development of sustainable professionalism).
302 e. Efficient business processes and financial systems with integrity (ensuring financial
303 integrity through the implementation of efficient business processes).

304 —

305 e.

306 Data Findings and Analysis

307 *Analysis or description of the problem situation in the XYZ company ambulance* 308 *service.*

309

310 In general, the Safety system and program in the XYZ Company are excellent, but the
311 implementation in the field still needs to be improved. Based on the result of the safety
312 culture survey, it showed in table 1.2:

313

314 Table 1.2: Descriptive Analysis Result
315 Safety culture at Ambulance Services in XYZ Company Qatar
316

Criteria	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference	
				Lower	Upper
Management Commitment	9.4474	1.13179	.18360	9.0754	9.8194
Communication	9.0526	1.48774	.24134	8.5636	9.5416
Employee Involvement	8.5000	1.42847	.23173	8.0305	8.9695
Training & Information	9.3947	1.15172	.18683	9.0162	9.7733
Motivation	8.3158	1.71015	.27742	7.7537	8.8779
Comply with Policy & Procedure	8.8947	1.87140	.30358	8.2796	9.5099
Learning Organization	9.2105	1.29777	.21053	8.7840	9.6371

317 Resource: Extracted from SPSS25.

318

319 Based on table 1.2 above, the highest value is a management commitment criterion with
320 an average score of 9.44 while the lowest cost is a motivation criterion with an average
321 rating of 8.31.

322

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324 Table 1.3: Frequency Analysis Result
325 Safety culture at Ambulance Services in XYZ Company Qatar
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Criteria	Value	Frequency	Percent	Valid Percent	Cumulative Percent
Management Commitment	No	11	28.9	28.9	28.9
	Yes	27	71.1	71.1	100.0
Communication	No	15	39.5	39.5	39.5
	Yes	23	60.5	60.5	100.0
Employee Involvement	No	18	47.4	47.4	47.4
	Yes	20	52.6	52.6	100.0
Training & Information	No	11	28.9	28.9	28.9
	Yes	27	71.1	71.1	100.0
Motivation	No	16	42.1	42.1	42.1
	Yes	22	57.9	57.9	100.0
Comply with Policy & Procedure	No	10	26.3	26.3	26.3
	Yes	28	73.7	73.7	100.0
Learning Organization	No	14	36.8	36.8	36.8
	Yes	24	63.2	63.2	100.0

327 Resource: Extracted from SPSS25.

328 Based on the table 1.3 above, comply with policy and procedure have the highest rating
 329 with a value of 73.7%, while employee involvement was the lowest value with a value of
 330 52.6%.

331

332 This is supported by internal data which is the key to the work performance of the
 333 ambulance unit (KPI). In this case, it can be seen with unsatisfactory achievements from
 334 the patient handling report of 94% during 2018. Even though reporting on services to
 335 patients is fundamental as the legality of all actions that have been done. Likewise, the
 336 value of the reporting index of pain scale and response time were 96%.

337

338 ***Rich Picture (RP)***

339

340 In this stage, identify the problem as a problematic situation known from the culture of
 341 the safety of ambulance services at the XYZ Company. Problematic situations aim to
 342 explain clearly about issues in the real world. The process at this stage is essential
 343 because it is related to the decisions of experts. After the results of the analysis
 344 concluded, the next process illustrated by drawing for explaining the situation in the real
 345 world. See, Figure 1.3 as below:

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Figure 1.3: Rich Picture of Situation Problem at Ambulance service of XYZ Company

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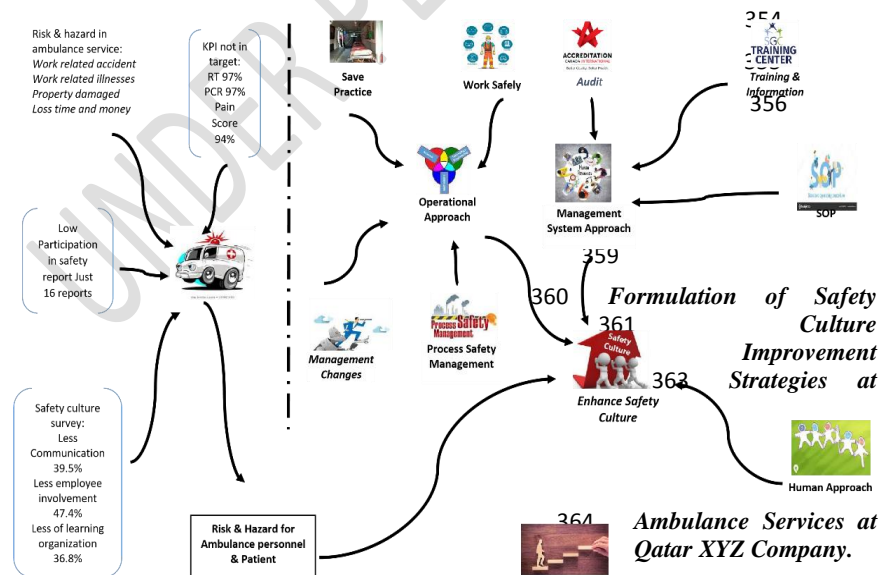


Figure 1.3: Rich Picture of Situation Problem at Ambulance service of XYZ Company

Formulation of Safety Culture Improvement Strategies at Ambulance Services at Qatar XYZ Company.

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According to Expert's judgment towards 8 criteria's and 3 strategies proposed in the effort to enhance safety culture at ambulance service in XYZ company, there were 3 main factors that get individual attention, namely: commitment of senior management is the most critical factor with a value of 0.247 (24.7%), followed by employee commitment and involvement with a value of 0.181 (18.8%) and compliance with regulations and existing procedures with a value of 0.140 (14%). The Expert's argued: "Commitments with a clear vision and mission from management and a good system improvement on OH&S will spur organizations and employees to always comply with OH&S." The synthesized result is seen in Figure 1.4.

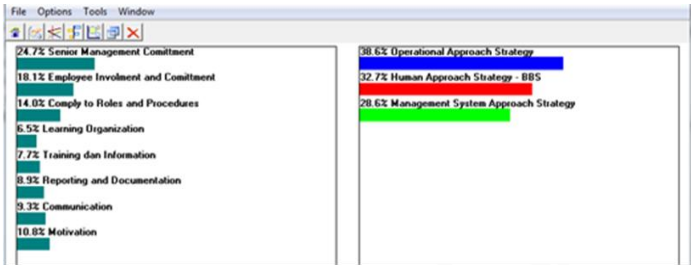


Figure 1.4: Strategy and factors to enhance safety culture at ambulance services at XYZ Company in Qatar. Sources: Extracted from Expert Choice 2000.

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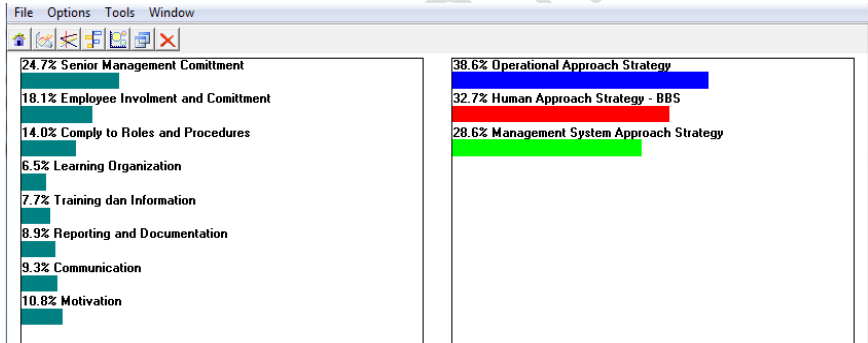


Figure 1.4: Strategy and factors to enhance safety culture at ambulance services at XYZ Company in Qatar. Sources: Extracted from Expert Choice 2000.

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The result of this research is in line with previous research from Price, 2013; Pattersen, Weaver, & Hostler. (2015) & Ernawati, Arini, & Haryono, (2017). They mentioned, "The risk factors that causing various hazards in the ambulance service environment, it came both internally and externally such as destitute of the systems, no organizational commitment, lousy culture, inadequate safety facilities and infrastructure. It is also because of procedures that do not meet standards, stress, lack of knowledge, training and motivation, conditions of work and weather climate". This study supported by Atack & Maher, (2010) on Perception of EMS personnel and health workers on safety issues in the pre-hospital service, they suggested, more active participation of EMS personnel to improve skills, clinical decision making and the necessity for changes in the regulations and health systems in the regions and the government, in the effort to enhance the safety of the patient.

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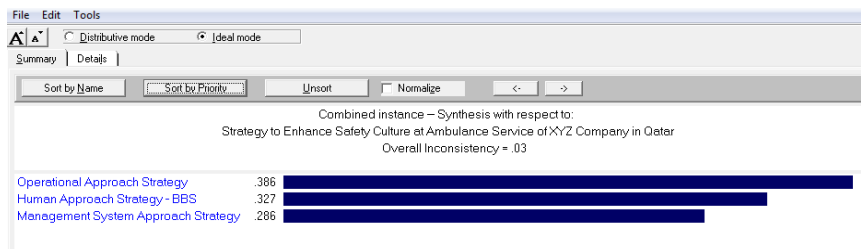


Figure 1.5: Priority of Safety Culture Improvement strategies in ambulance services at Qatar XYZ Company. Source: Extract from Expert Choice 2000

Anyhow, the essential strategy based on the expert's judgment was operational approach strategy with a value of 0.386 (38.6%). The following strategy was the human approach. In this approach strategy, the expert binds the second priority with a value of 0.327 (32.7%). While the latter approach is a management system approach with a value of 0.286 (28.6%). Overall this assessment has a level of inconsistency or CR 0.03 so that the judgement and opinions of experts was logic and can be accepted. See, Figure 1.5.

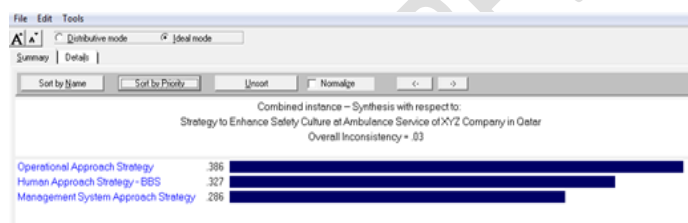


Figure 1.5: Priority of Safety Culture Improvement strategies in ambulance services at Qatar XYZ Company. Source: Extract from Expert Choice 2000

Based on the expert's judgment, who was prioritizing operational strategies was the most important with a value of 0.386 (38.6%) is very appropriate. It is because of the XYZ Company already has an excellent safety management system, but the implementation in the field still needs to be improved. In this case, it was evident from the KPI index that does not meet the target and safety culture results. The determination of safety values is not limited to paper, but it needs explicit work. For this reason, a strategy for improving safety culture with operational approaches can be carried out in the following ways (Ramli, 2013):

- a. How to work safely.
- b. Management changes
- c. Safe operation
- d. Process safety management

The second strategy should be developed is a human approach strategy with a priority value of 0.327 (32.7%). The approach to insane, or better known as behavior-based safety (BBS), is a fundamental alternative strategy. This strategy requires hard work to run it. Behavior change cannot be done in a short time but requires clear steps and

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418 programs with the support of top management. They argue that; "*Safety culture will run*
419 *effectively and successfully if there is motivation and have positive attitudes and*
420 *behaviors, so they will tend to do positive things too.*" Thus, all existing regulations and
421 systems will be easy to run.

422

423 The last strategy is the approach strategy of the system with a value of 0.286 (28.6%). In
424 this approach focuses on building an OH&S management system within the organization
425 to improve the program and safety culture. Reasonable policies and procedures support
426 the success of safety in the operation of ambulances or other activities — this approach
427 made by creating a system of documentation, control of documents, and data. At the
428 same time, building work plans in ambulances, targets, and excellent communication
429 between personnel. The Expert's mentioned: "*A safe way of working by analyzing the*
430 *surrounding risks and following the procedures in the ambulance service, will provide a*
431 *sense of security in working.*"

432

433 Studied by Jones (2005) in Wankhade & Jones, (2015) states, "Quality management
434 systems that are simple, are continuous, and allow for rapid changes in the system need
435 to be implemented". To maintain and improve service, systematic documentation,
436 routine training, and continuous audits need to be promoted.

437 It is

438

439

440

441 also supported by Pirrallo, Khan, & Kuhn, (2005) "The development of policies and
442 protocols related to operational safety directly impacts the safety of the patient". ". Those
443 all the steps will improve the system and quality management in the operation of the
444 ambulance.

445 According to Wankhade & Jones, (2015) in ethnographic studies in the UK about
446 cultural elements in ambulances, identifying three different occupational subcultures
447 using the Schein (1996) typology: Elements of safety and health culture can be organized
448 into three categories: a). Organization. This includes policies, procedures, and systems
449 related to safety, and health. b). Psychological, which involves individual perceptions,
450 attitudes and values. c). Behavior, people's behavior, health, and safety behavior.

451

452 Meanwhile, in the context of ambulance operations, commitment from executives or top
453 management is very significant because it is related to the vision and mission, values,
454 financing, and system building. If you do not have a clear commitment, the results will
455 not be achieved. So, with this, expert judgment can be summed up simply in an AHP
456 hierarchy like figure 1.6 and in-house model like figure 1.7.

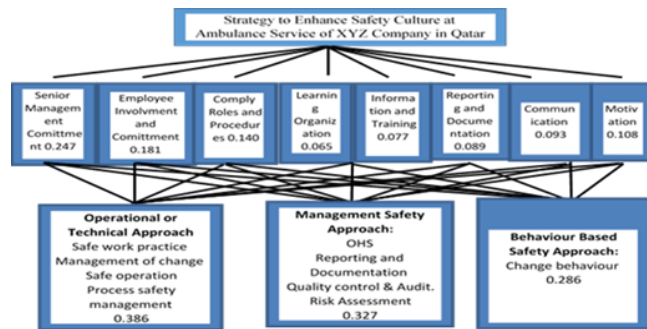


Figure 1.6: AHP Hierarchy Results of Strategy to Enhance Safety Culture at Ambulance Service of XYZ Company in Qatar.



Figure 1.7: The House Model of Strategy to Enhance Safety Culture at Ambulance Service of XYZ Company in Qatar

Conclusion

Provide a high quality of ambulance services with the medical organization, and the safety aspect is one most crucial component while delivering care. Enhancing safety culture within an organization is one program to improve safety performance. According to the discussion and expert's judgement with AHP method regarding of strategies to improve safety culture in ambulance services at XYZ Qatar, the researcher can answer the research formulation as follows: (1).To enhance the safety culture of ambulance services in XYZ companies, the operational approach strategy is the most important strategy to implement and develop. (2). In terms of implementing this strategy, the commitment factor of senior management is the most important thing in an effort to improve safety culture in ambulance services in Qatar XYZ Company. (3). The House Model method is a model or presentation of a strategy to improve safety culture in the ambulance service with a mission on the safety of ambulance personnel and patient. The three main factors become pillars in building a strategy to improve safety culture in ambulance services, namely commitment from management and employees, compliance with regulations and motivation. These pillars upheld through operational approach safety programs through safe work, changes to management by making regulations and work standards, synergized with approaches to employees by changing behavior and perceptions and providing motivation with the support of a sound system approach about safety through a safety management system that continues to develop with the ongoing audit.

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COMPETING INTERESTS DISCLAIMER: Competing Interests Disclaimer;

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Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

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Recommendation

493

The development of safety culture in ambulance services will improve the quality of services that prioritizes the safety of personnel and patients. Safety concerns from all level management and effective approach will be improve quality service.

496

Further research needs to be done in an effort to develop a safety culture in ambulance services and the development of safety programs that are directly related to the safety of ambulance personnel and patients in particular.

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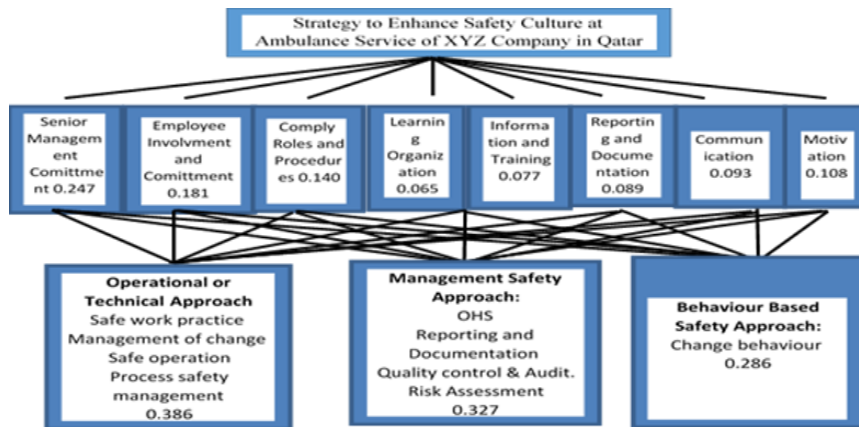


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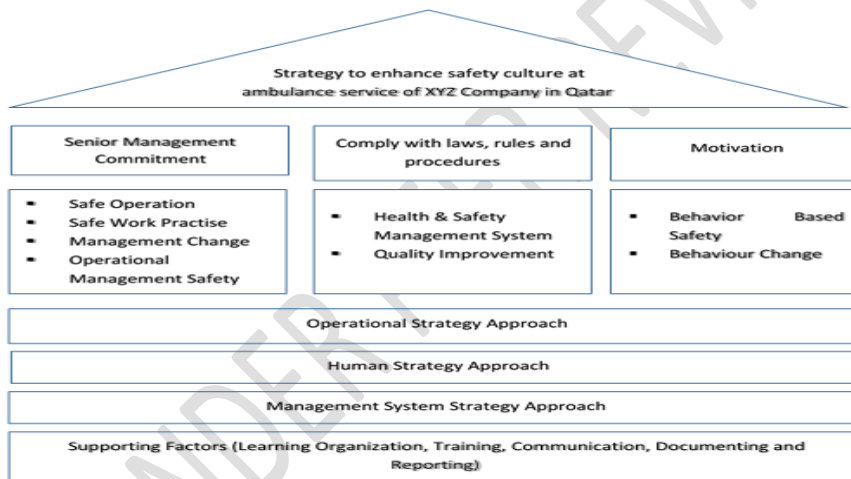


Figure 1.7: The House Model of Strategy to Enhance Safety Culture at Ambulance Service of XYZ Company in Qatar

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