

# Giving Voice to Crew Members to Enable an Effective Support

## Programme: Preliminary Results of IT-APA Support Survey 2020

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**Abstract Introduction.** EU Regulation 1042/2018 requires Airlines to implement Support Programmes for flight crews. **Research question.** We wondered if the application of EU Regulation could encourage flight crews to seek help from peers and psychologists. **Method.** A multiple-choice questionnaire was developed. Retrieved questionnaires (N=537) were analyzed through Multiple Correspondence and Cluster Analysis. **Results.** Two factorial dimensions have been highlighted showing participants' view about the role of psychologists and well-being respectively. Four clusters aggregate responses. **Discussion.** Data highlight the need to develop a view on well-being and to clarify the benefits of psychologists' involvement within the organization. **Conclusion.** The work underlines that the application of the EU Regulation may not be enough to encourage flight crews to request for help.

**Keywords:** Support Programme, Well-being, Culture, Psychological Support.

## Introduction

After Germanwings crash in March 2015 (Bureau d'Enquetes et d'Analyses 2015, European Aviation Safety Agency 2015), EU Regulation 1042/2018 was passed in order to implement a support programme for the psychological and physical well-being of Flight Crews (Executive Director Decision 2018/012/R; EASA EN to Decision 2018/012/R). In compliance with the above mentioned EU Regulation, Commercial Air Transport operators are required to facilitate access to psychological support to pilots who experience emotional or mental health issues. Initial support may be provided by pilot peer volunteers who, when required, may refer to professional advice.

A support programme is a proactive programme applying the principles of "just culture" (EU No 376/2014, point 36,37), whereby the senior airline management, mental health professional, trained peers and in many cases flight crew representative, work together to enable self-declaration, referral, advice, counselling and/or treatment where necessary, in case of a decrease in medical fitness.

A peer is defined as follows: "(a) In the context of a support programme, a 'peer' is a trained person who shares a common professional qualifications and experience, and has encountered similar situations, problems or conditions with the person seeking assistance from a support programme. This may or may not be a person working in the same organization as the person seeking assistance from the support programme. (b) A peer's involvement in a support programme can be beneficial due to similar professional backgrounds between the peer and the person seeking support. However, a mental health

professional should support the peer when required, e.g. in cases where intervention is required to prevent endangering safety” (EASA Annex III to ED Decision 2018/012/R GM8 CAT.GEN.MPA.215 p.8).

Support Programmes should be easily accessible for flight crews and should provide adequate means of support at the earliest stages (EASA Annex III to ED decision 2018/012/R GM1 CAT.GEN.MPA 215 p.6). EASA Regulation also recommends the presence of mental and psychological health professionals to be involved in the Support Programme: “(a) A support programme should contain as a minimum the following elements: (1) procedures including education of flight crew regarding self-awareness and facilitation of self-referral; (2) assistance provided by professionals, including mental and psychological health professionals with relevant knowledge of the aviation environment; (3) involvement of trained peers, where trained peers are available” (EASA Annex III to ED decision 2018/012/R AMC3 CAT.GEN.MPA.215. p. 5).

Furthermore, Italian Aviation Authority - ENAC (Ente Nazionale Aviazione Civile)- recommends the implementation of Support Programme also for Cabin Crews (ENAC Information Notice n. 2020/02 and n. 2020/028).

Notwithstanding the great potential represented by Support Programmes, there is no knowledge whether flight crews are actually willing to avail themselves of such an “instrument” and therefore to ask for help, even when in need. In addition to that, there is no evidence whether flight and cabin crews are already familiar with the professionals involved in the support programme or if they are aware of the role of those professionals in the programme, and therefore if they trust them or are willing to contact them if needed. The aim of our research is to find answers to these questions in order to outline the current cultural environment, before the activation of Support Programmes. The research also aims to investigate how flight and cabin crews perceive their own health and psychological well-being and whether they are prepared to recognize and cope with the first signs of distress. A review of 20 studies showed that the prevalence of depression experienced by commercial airline pilots ranged from 1.9% to 12.6%, meaning that pilots may experience depression as frequently as the general population. Among the factors negatively affecting mental health, those studies included substance abuse, experience of verbal or sexual abuse, as well as occupational stressors such as disruption in sleep circadian rhythms and fatigue, which may increase risk of developing mood disorders (Pasha & Stokes, 2018).

It should be noticed that no results have been published to date from research involving samples of general Italian civil aviation crews. Even though Italian crew members have been often involved in surveys or investigations by their own airline, results are usually managed internally.

The activation of a support programme as promoted by EU Regulation 1042/2018 certainly has positive impacts on safety, when considering the focus on the information and implementation stages the Regulation provides for. However, in our opinion, it is important to avoid a top/down approach as this could lead to a different perception of the role of the psychologist within the organization and of the concept of psychological well-being by those the service aims to target.

If, on the one hand, psychological support for aviation operators is a useful tool to promote wellbeing and to guarantee the safety and quality of flight operations, on the other, self-referral to clinical and psychological services is often stigmatized as it may interfere or severely limit an individual’s ability to work. A research carried out on pilot well-being and work-related stress (Cahill et al., 2019a), reported a considerable level of stigma among pilots in relation to report mental issue at work. Out of a sample of 330 pilots, 55.6% reported that if they were “unfit to flight” due to a mental health issue, they would provide a different reason.

The main reason was because of the fear of loss of licence and loss of long-term earnings.

Another research from same authors, based on a survey and a preliminary workshop, pointed out: “participants indicated a considerable level of stigma in relation to reporting mental health issue at work. In terms of mental health, it was agreed that pilots may be reluctant to stand down or disclose mental health problems, given real concern over the potential impact of this on their job (i.e., fear of losing their licence and/or possible impact on future career progression)” (Cahill et al., 2019b).

According to EASA regulation, airlines might support self-referral of decrease in medical fitness of their staff by actively working on some of the consequences of unfitness, offering motivating alternative positions and limiting the financial consequences of a loss of licence, for example through extending loss of licence coverage (EASA EN to decision 2018/012/R p.8).

The aim of this work is to outline the perception that Italian crew members have of well-being, of the role of psychologists and their own willingness to ask for help. The knowledge of these areas could promote the development of more effective and efficient Support Programmes in terms of interventions tailored on the characteristics of receivers.

## Conceptual Framework

The Semiotic Cultural Psycho-social Theory (SCPT) (Russo et al., 2020; Salvatore, 2018; Salvatore et al., 2019; Salvatore et al., 2009; Salvatore et al., 2019; Salvatore & Venuleo, 2017; Valsiner, 2007) posits that the mediational role of the sensemaking is crucial in the way people represent and deal with their material and social world, thus shaping their experience.

Accordingly, people interpret life experience according to specific meanings consistent with the symbolic universes they belong to (Salvatore et al., 2018; Venuleo, et al., 2020). Symbolic Universes are conceptualized as systems of implicit, embodied generalized assumptions or patterns of meanings (e.g. practices, behavioral scripts) that foster and constrain life experience (Salvatore et al., 2018).

Previous studies have shown the essential role Symbolic Universes play in grounding, motivating, and channeling social and individual behavior (Marinaci et al., 2020; Salvatore, et al., 2019; Venezia et al., 2013; Venuleo et al., 2015; Venuleo et al., 2017).

Differences in the way people belonging to the same group feel, think and behave can be considered as the result of a different positioning within Symbolic Universes, namely the result of different interpretations of the participation to the same affective symbolic field. Therefore, in this research we will adopt the term *Modes of signification (MS)* (Venuleo et al., 2014) to map differences within the same culture. A MS is a specific way of interpreting the contexts consisting of a certain subset of actors participating to it. Each MS makes pertinent a specific pattern of meanings provided by the organizational culture, but making other meanings of the same organizational culture less salient (Cobern & Aikenhead, 1998). Each MS thus feeds a peculiar mode of feeling, thinking, making decision and acting – in sum, a specific way of participating to the system of activity, in terms of expectancies, time and quality of acting, use of knowledge and competence, attitudes towards colleagues, clients, stakeholders and so on.

Modes of signification can be analyzed both in their content and in terms of positioning within the Symbolic Universe of which they are an expression. In its turn, the symbolic field substantiating the organizational culture can be studied in terms of its basic components, namely the dynamic space, defined by a set of *affective latent dimensions of sense (LDS)*. Each LDS describes an oppositional linkage between two polarized generalized affective meanings (e.g. good/bad, reliable/unreliable, useful/useless, pleasant/unpleasant; cf. Salvatore et al., 2017), connoting a given emotional quality of the experience (Mossi & Salvatore, 2011).

## Method

## **Instruments**

A custom-designed questionnaire was administered to Italian crew members, based on ISO psychodynamic – ISO methodology - developed by Carli and his colleagues (Carli & Paniccia, 1999; Carli & Salvatore, 2001); this research procedure has been implemented in organizational (Salvatore et al., 2019; Ciavolino et al., 2019), clinical (Marinaci et al 2019) and community (Salvatore et al., 2018) research fields. The questionnaire consists of two different parts: the first part is aimed at collecting respondents' personal data (age, gender, role, flight hours etc.), while the second part analyses 11 items focusing on participants' view of the role of psychologists, their willingness to ask for help and their own concept of wellbeing. Question number 12 is an open question asking for their view on wellbeing. Items were designed to identify expressions of perceptions, judgments and opinions of the participants. Each item is composed of a question and a set of alternative answers the respondent is required to choose from. The creation of multiple-choice answers for each item was based on a preliminary evaluation of the various options, which resulted from semantic alternatives referring to the modalities of symbolic connotation of stimuli. Considerations behind the formulation of the multiple-choice answers were made in order to delineate the dimensions inspiring the symbolic meaning of each item. The questionnaire is an online self-report instrument powered by the Survey Monkey online service and does not collect identifying information about the crew members. It requires about 10 minutes to be filled in.

All the procedures involved in the study are in compliance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Pursuant to the ethical code of the Italian Psychology Association (AIP) (<http://www.aipass.org/node/26>) and the Italian Personal Data Protection Code (Legislative decree No 196/2003), participants have been informed about the general aim of research, the anonymity of responses and the voluntary nature of participation and they signed an informed consent. No incentive was given.

The project was approved by the Ethics Commission for Research in Psychology of the Department of Dynamic and Clinical Psychology of the University of Rome "Sapienza" (protocol n. 0000328 of 16th April 2020).

## **Participants**

All CAT (Commercial Air Transport) Italian Operators Flight and Cabin crew members were invited to join this project; pilots and technical specialists (HCM-Helicopter Crew Member, HHO-Hoist Helicopter Operator) operating in helicopter public transport services were also included.

This project was presented by the Italian Aviation Psychology Association, IT-APA (Italia-Associazione Psicologia della Aviazione) to every Italian flight operator concerned by the EU Regulation 1042/2018 and thus involved in the implementation of a Support Programme for their own flight crew members. The "IT-APA Support Survey 2020" results analyzed in this article are based on a questionnaire administered over a period of time that coincided with the severe civil aviation crisis caused by Covid19 pandemic. Despite the critical issues airlines had to face, 3 out of 16 airline operators showed great commitment in promoting our research. They sent out business emails providing for detailed information on how to submit the questionnaire and inviting their crews to fill it in.

In order to encourage participation in the research, the research and the questionnaire were also presented to trade unions.

A description of the research and an invitation to participate were also published on IT-APA website and LinkedIn page. In the pre-filing phase, subjects had been informed that results would be used for non-clinical purposes in research, studies and publications and would be published with reference to the entire national population, without mentioning specific airlines.

The questionnaire actually does not aim at investigating the internal culture of a single organization but it is rather regarded as an indicator about national civil aviation population. Out of a total amount of about 7650 subjects (in addition to about 560 crew members employed on helicopters) belonging to Italian crew members from Italian COA, data were collected from 535 questionnaires, which were received until April 22, 2020. Crew members can still respond to the survey, which will be open until 13<sup>th</sup> February 2021. In table 1 a description of the sample analyzed is provided. Only 0.75% of the questionnaires have been filled in by helicopter crews.

**Table 1.** Personal data.

Variable	Descriptor	N	percentage %
gender	male	337	63
	female	198	37
age	<30	83	15,5
	30-40	83	7,1
	41-50	95	17,8
	>50	319	59,6
role	pilot	151	28,2
	co-pilot	164	20,7
	assistant	148	27,7
	technical specialist	68	12,7
	Helicopter pilot	4	0,7

## Data analysis

Through a multidimensional analysis, integrating Multiple Correspondence Analysis (MCA) (Benzecri, 1973) and Cluster Analysis (CA) (Gore et al., 2006), the Latent Dimension of Sense was detected, on which the symbolic Universe of the respondent is built; respondents could therefore be grouped into different profiles. For similar approaches see (Ciavolino et al., 2019; Marinaci et al., 2019; Salvatore et al., 2018, 2019;)

The MCA allowed factorial dimensions to be extracted; that describe the way answers combine with each other. Each factorial dimension could be regarded as a dichotomous structure made up of the opposition of mutually exclusive response patterns. In this way, each factorial dimension was viewed as the marker of a Latent Dimension of Sense. The space defined by the main factorial dimensions was considered as the symbolic field characterizing the organizational culture. The two factorial dimensions extracted were therefore used as a similarity criterion in the following CA, which aimed at grouping participants in homogenous clusters because of the similarity in their response profiles. This allowed a set of clusters to be obtained, each one consisting in a peculiar pattern of response co-occurrences. Each cluster was interpreted in terms of a Mode of Signification, therefore as a potential marker of a specific modality for understanding the role of the psychologist within the organizational culture.

## Results

The first two factorial dimensions extracted by the MCA explained 5.89% and 4.65% of the variance respectively; in the light of the high dispersion of data in the matrix analyzed, these percentages account for a high percentage of explained variance (see Benzecri, 1973, 1979; Bolasco, 1999), especially with reference to the fact that the rate of variance depends on the number of variables and modalities analyzed. Table 3 and 4 show the response modalities having the highest statistical association with the factorial dimensions and, therefore, mainly

contributing to their interpretation. (The level of association was measured using the V-test: the higher the V-test, the higher the level of association between the modality and the factor, therefore the higher the characterization of the factor by modality. It should also be noted that the factor is expressed in terms of polarities; as a consequence, negative V-test values indicate the association to the negative polarity and positive V-test indicates the association to the positive one).

**Table 3.** The item characterizing the first extracted factor. The factor highlights respondent's representation of the psychologist.

<b>Polarity</b>	<b>Item</b>	<b>Modality</b>	<b>V Test</b>
negative	in case you feel the need for support, do you think that consulting a psychologist will be helpful	a little	-13,57
	in case you feel the need for support, do you think that consulting a psychologist will be useful	a little	-13,17
	in case you feel the need for support, do you think that consulting a psychologist will be needless	quite	-11,56
	in case you feel the need for support, do you think that consulting a psychologist will be necessary	Not at all	-11,39
	in case you feel the need for support, do you think that consulting a psychologist will be reassuring	a little	-10,76
	in case you feel the need for support, do you think that consulting a psychologist will be interesting	a little	-10,64
	in case you feel the need for support, do you think that consulting a psychologist will be necessary	a little	-10,63
	in case you feel the need for support, do you think that consulting a psychologist will be helpful	Not at all	-10,24
positive	wellbeing deals with psychological status	a lot	7,26
	in case you feel the need for support, do you think that consulting a priest will be helpful	probably	8,19
	to request for psychological consultation is fancy	Not at all	8,95
	in case you feel the need for support, do you think that consulting a priest will be helpful	with lot of probabilities	10,14
	in case you feel the need for support, do you think that consulting a psychologist will be reassuring	a lot	11,28
	in case you feel the need for support, do you think that consulting a psychologist will be necessary	a lot	12,32
	in case you feel the need for support, do you think that consulting a psychologist will be interesting	a lot	13,29
	in case you feel the need for support, do you think that consulting a psychologist will be needless	Not at all	13,62
	in case you feel the need for support, do you think that consulting a psychologist will be helpful	a lot	13,81
	in case you feel the need for support, do you think that consulting a psychologist will be useful	a lot	13,97

**Table 4.** Item characterizing the second extracted factor. The factor highlights respondent's representation of the concept of well-being.

<b>Polarity</b>	<b>Item</b>	<b>Modality</b>	<b>V Test</b>
negative	Well-being deals with relational aspects	a lot	-9.31
	psychological health refers to the ability of facing difficulties	a lot	-8.33
	wellbeing deals with relational aspects	a lot	-8.03
	psychological health is accepting one's own limits	a lot	-8.00
	psychological health is adaptation to environmental demands	a lot	-7.88
	psychological health is developing good relationships	a lot	-7.59
	psychological health means caring about oneself	a lot	-7.53
	in case you feel the need for support, do you think that consulting a priest will be helpful	with low probabilities	-7.44
	wellbeing refers to physical conditions	a lot	-7.16
	health is the lack of symptoms	a lot	-6.81
positive	psychological health is accepting one's own limits	quite	5.87
	psychological health refers to the ability in facing difficulties	quite	5.93
	in case you feel the need for support, do you think that consulting a psychologist will be interesting	not at all	6.56
	in case you feel the need for support, do you think that consulting a psychologist will be reassuring	not at all	7.02
	in case you feel the need for support, do you think that consulting a psychologist will be helpful	not at all	7.10
	in case you feel the need for support, do you think that consulting a friend will be helpful	with low probabilities	7.18
	in case you feel the need for support, do you think that consulting a relative will be helpful	with low probabilities	7.18
	in case you feel the need for support, do you think that consulting a psychologist will be useful	not at all	7.22
	Well-being deals with relational aspects	quite	8.14
	health is the lack of symptoms	quite	8.55

According to the data collected, the first extracted factor highlights participants' view about the role of psychologists: more specifically, the representation of the psychologist could be understood according to opposite latent dimensions of sense (see figure 1):

- The negative pole (labelled devaluation of the psychologist) seems to be characterized by the position of those who clearly want to keep their distance from psychologists, who are seen as educators and professional whose advice they would never ask for and are not willing to ask for in the future. Health is conceptualized as the ability to live with one's own limitations and, under no circumstances, respondents seem to be willing to ask for help. In the event of a personal problem that may impact work efficiency, this would be

solved contacting a professional figure within the airline organization (such as a Safety Manager, Fleet Manager, Tutor, etc.). In other words, respondents seem to be willing to report their own personal condition to a senior manager rather than asking for help.

- The positive pole (valorization of the psychologist) aggregates the answers from those who perceive psychological well-being as the ability of cultivating good social relations, to adapt to change and the daily attention paid to oneself. The psychologist's figure is something the respondent is very familiar with and is considered essential as he/she is regarded as a counsellor. If there were a personal problem that might impact one's own working capability, they might contact peers.

The second factor reveals the representations of health and well-being. In this case the two opposite orientations are the following:

- the negative side (labelled strongly-oriented physical and relational well-being) considers well-being as associated with a relational, psychological and physical dimension and the concept of health associated with the ability to endure adversity and recognize one's own limitations. Well-being is also associated with the absence of symptoms. The respondents did not have any previous contact with psychologists, who are seen as educators who may offer advice. If there were a personal problem that might impact working activities, the respondents would contact a professional outside their own airline organization.
- on the positive side (labelled weakly-oriented physical and relational wellbeing), well-being is associated with a relational and social aspect but without it being of paramount importance. When in need of help, neither friends nor family nor professional figures, such as a psychologist or a doctor, would be contacted. Data therefore suggest a level of personal insularity. Should one's unease affect work efficiency, a figure within the airline operator such as (Safety Manager, Fleet Manager, Tutor, etc.) would act as a point of reference.

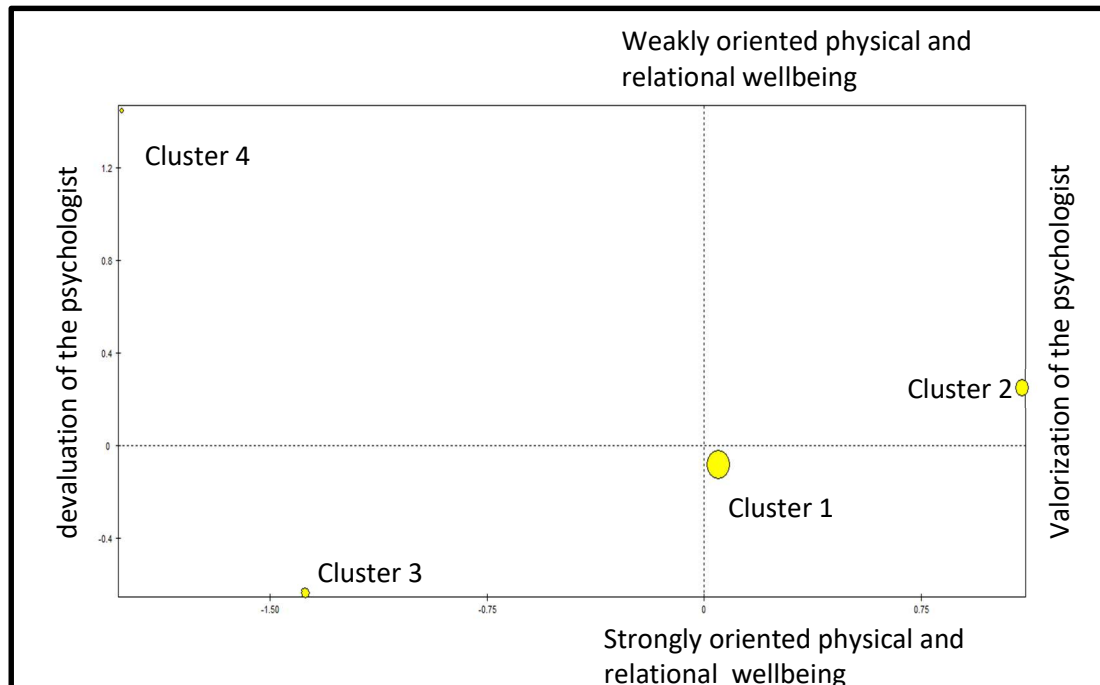
The following Cluster Analysis, grouping respondents according to similarities in the answer's profile on the extracted Symbolic Universe, shows 4 clusters as an optimized partition. Individuals belonging to cluster 1 (52% of respondents) acknowledge the importance of the physical, psychological and relational aspects on which well-being is based, but they do not credit to psychologists to play a crucial role in the promotion of well-being.

Broadly speaking, cluster 2 (25% of respondent) represents the respondents who acknowledge both the importance of the role of psychologist and a concept of well-being viewed in socio-relational terms. If there were a personal problem that might impact working activities, the respondents might contact a peer.

On the other hand, cluster 3 (17% of respondent) represents individuals who do not recognize the importance of the role of psychologists and who do not view the well-being dimension in psychophysical terms.

Finally, Cluster 4 (6% of respondents) results polarized according to the extracted factors and represents the individuals who do not recognize the importance of psychological support and who do not regard wellbeing as an important factor in psychological or in physical terms.





**Figure 1.** Representation of clusters' positioning on the retrieved symbolic universe.

## Discussion

The aim of the present work is to detect the symbolic universes on which the view of well-being and the role of psychological intervention are based, as related to the EU regulation 1042/2018 that requires the implementation of a psychological support intervention for civil aviation operators. According to the above-mentioned theoretical framework and when considering the basic role of sensemaking in triggering a specific view about how daily life experience is interpreted, a questionnaire was designed to be filled in by Italian civil aviation crew members in order to understand their perception of well-being and of the role of psychologists.

The analysis allowed extracted factorial components, which describe symbolic universe – i.e. cultural models- to be identified, which provide for a representation of psychologists and wellbeing according to respondents. In addition to this, the extracted factors also show individual differences in the way respondents position themselves around those dimensions (see the different clusters positions).

When looking at the clusters, it is worth noticing important differences: first of all, in cluster 1, representing 52% of the sample analyzed, a clear polarization does not emerge. Such a result could be interpreted in terms of a basic difficulty in facing the issues presented in the questionnaire. According to the results, respondents have not a clear view of the role of psychologists and of the nature of wellbeing. Therefore, crew members in cluster 1 are a group to target to raise awareness on the key role psychologists play in promoting and supporting social and psychological wellbeing.

Targeted interventions on the respondents from cluster 1 would help them to shift their positioning towards the positioning of respondents from cluster 2.

Respondents in Cluster 2 acknowledge the importance of both the role of psychologists and that of the socio-relational aspects of well-being. They therefore represent a suitable subsample of individuals who are able to take advantage of the benefits of the psychological support to flight crews promoted by the EU Regulation. On the other hand, Cluster 3 represents respondents who do not acknowledge the usefulness of a psychologist nor accept a socio-relational view of well-being: wellbeing is considered from a medical point of view and therefore psychologists are not the professionals able to address their needs. Similarly, Cluster 4 respondents do not recognize the role of psychologists, nor the importance of wellbeing as an important factor.

In other words, with reference to the role of psychologists and the perception of the Support Program, results show that, despite 52% of respondents have not a clear understanding of the role of psychologists and of the nature of their own wellbeing, 48% of them is more or less evenly split into two groups: on one hand, respondents who acknowledge the importance of psychological support and look at a support program as an opportunity (cluster 2) and, on the other hand, respondents who do not acknowledge their usefulness (cluster 3 and 4).

## **Conclusion**

The present work is still in progress as it only provides for partial results based on the responses to the questionnaire submitted until April 22, 2020. Crew members will be able to fill in the questionnaire until 13<sup>th</sup> February 2021 as a “symbolic date”, as the date of application of the new requirements introduced by EU Regulation 1042/2018 has been deferred to 14<sup>th</sup> February 2021. It cannot therefore be considered a comprehensive picture of the research.

Despite some current limitations -e.g. little attention on the part of airlines in spreading the questionnaire, the intrinsic limits of the survey in evaluating the addressed areas and the convenience sample (respondents were actually gathered according to convenience criteria)- some interesting issues emerged.

The analysis of final data, which will be available when the survey is concluded, will confirm or change the results obtained; furthermore, final data will also be used to extract some variables and highlight for example, any difference that may result depending on the role of respondents (cabin crew vs flight crew) and gender differences.

About the latter, it has to be reported that no research about Italian female flight crew members (captain, first officers or pilots) had ever been conducted before. On an overall group of 59 women, 69% of them submitted their response to “IT-APA Support Survey 2020”. We therefore aim to record and analyze information gathered from this specific group of the sample.

When final data will be processed, it will also be possible to work on a deep analysis of the extracted cluster and data collected through the open question (last question of the questionnaire is an open question) will be further analyzed.

So far, as other research has already showed (Kenedy et al., 2019; Hubbard, 2016; Bentley, 2019), the present work confirms that crew members show a reluctance to ask for help. The efficacy of a support programme is therefore strictly connected to previous interventions whose aim must be to promote an increasing demand of the service by future users (Carli & Paniccia, 2003).

In order to create such a virtuous cycle, operators could develop a campaign focused not only on providing information about the support programme (which is already mandatory) but also on developing crews’ self-awareness about the relation between psychological well-being and the quality of professional performance and personal life.

Furthermore, an effective implementation of the support program by airline operators should go beyond minimum regulatory compliance as flight crews must be made aware of the benefits resulting from the support programme and must be involved in its implementation. This is the only way to provide crews with a real support in terms of psychological well-being and to guarantee the safety and quality of flight operations.

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