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## ARTICLE
# Psychological Risk Factors of Terrorist Offenders in Indonesia

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| ARTICLE INFO | ABSTRACT |
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| | Psychological criminogenic factors for identifying terrorist offenders at risk of recidivism in Indonesia remain unclear; hence the adequate assessment to those involved with terrorism and measurement of effective terrorism rehabilitation are questioned. 'MIKRA' Risk Assessment was developed to identify individual criminogenic risk factors and needs of terrorist offenders in Indonesia. It is formulated to set up future parameters of effective terrorism rehabilitation. MIKRA study involved thirty-two eminent Indonesian counterterrorism experts and practitioners in semi-structured interviews and qualitative data analysis. The study identifies 18 individual risk factors and needs of ideology-based terrorist offenders that are grouped into one of three higher order domains: Motivation, Ideology, and Capability. |

## 1. Introduction

The number of research papers focused on terrorism has increased dramatically since the 9/11 tragedy [1]. They have produced many etiological theories and opinions regarding pathways to terrorism [2]. Nevertheless, there remains a deficiency of empirical research into terrorism [3,4]. There has been limited valid and systematic examination of individual risk factors for terrorism [5]. The deficiency of empirical researches on terrorism risk assessment and effective rehabilitation is caused by many

factors; however, it is assumed to be primarily because of the difficulty in engagement with terrorists [6] and confidentiality and the sensitivity of the issue [7], making research and publication very challenging. Furthermore, there is a potential that terrorism researchers may be subjected to close and critical observation and suspicion from both authorities and terrorism networks alike [8].

In terms of investigation into individual terrorism risk factors, there is an increasing debate among scholars (in Criminology and Forensic Psychology) regarding whether general criminal risk assessment methods are applicable

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to assessments of terrorism risk. LaFree and Dugan [9] highlight five conceptual similarities and six conceptual differences between terrorism and general crime. The similarities include (1) both studies of terrorism and common crime are intensively interdisciplinary, (2) both terrorism and general crime are social constructions, (3) for both, there are wide discrepancies between formal definitions and the practical applications of these formal definitions, (4) terrorism and general crime are committed by young males, and (5) sustained levels of terrorism and sustained levels of common crime destabilize social trust. The differences include (1) terrorism activities usually constitute multiple crimes, (2) the response to general crime seldom goes beyond local authorities, unlike terrorism, (3) the offenders of common crimes are typically trying to avoid detection, in contrast to terrorist offenders who are looking for maximum attention and exposure, (4) terrorism is typically used as a tool directed at wide-ranging political goals, unlike common crime, (5) terrorist offenders have higher goals, thus they see themselves as altruists, and (6) in terrorism, offenders change their criminal activities over time and are more likely than general criminals to revolutionize. LaFree and Dugan [9] argue that finding the dissimilarities between terrorism and general crime are no more challenging than dissimilarities between general crime and more specialized crimes (i.e., gang activity, organized crime, hate crime, or domestic violence). Likewise, Rosenfeld [10] refutes the concept that terrorism is qualitatively dissimilar to any form of violence criminologists' study. In the field of forensic psychology, the application of contemporary approaches to general violence risk assessment to the field of terrorism is challenged by Dernevik, Beck, Grann, Hoge, and McGuire [11]. Further, they argue that findings from studies on mentally disordered offenders and general violence perpetrators may not be relevant to the prediction of recidivism in those who engage in politically motivated behavior [12]. Responding to this dispute, Monahan [5] argues that valid individual risk factors for terrorism have to be identified before determining whether contemporary violence risk assessment approaches can be applied to terrorism risk assessment.

In Indonesia, how to assess terrorist offenders and foreign terrorist fighters coming back from several conflicting zones is unclear, hence security agencies are still making efforts to create specific constructs and scales [13]. The current instruments of CVE (Counter Violent Extremism) in Indonesia are merely measuring religious radical extremism, not risk and need factors of offenders after being detained [13]. The government calls for a need to apply extremism screening tests at schools and government offices [14-17]. Due to the lack of knowledge and research on risk factors of terrorists after detained, several security agencies simply categorise perpetrators into unclear categories (e.g., 'radical vs non-radical', 'cooperative vs non-cooperative', and 'capable vs not capable to make bomb' [18-23]. Further, some Western instruments for terrorists in Indonesian prisons do not thoroughly fit into Indonesian context and culture [24].

Against this background, 'MIKRA' *Motivation-Ideology-Capability* (MIC) Risk Assessment was developed to identify individual criminogenic risk factors and needs ("Risk-Need") of terrorist offenders in Indonesia. This study was formulated to set up future parameters of effective rehabilitation/responsivity to terrorism. The study was inspired by Psychology of Criminal Conduct (PCC) which emphasizes the identification of *Risk* and *Need* of criminal offenders, before *Responsivity* (RNR) or rehabilitation/treatment [25]. PCC itself is holistic and multidisciplinary and open to the contributions of any discipline in explaining individual differences in the criminal behavior of individuals [26]. The study was conducted in Indonesia which is aimed to increase knowledge to contribute to the risk assessment of ideology-based terrorist offenders in Indonesia, particularly to define their individual risk factors.

## 2. Causes of Terrorism

Schmid [27] collected 109 academic definitions of terrorism and argued that the number of available definitions of terrorism might be similar to the number of published experts in the field. Hence, the lack of consensus is undeniable and expected, given the variety of terrorist offenders' behaviors, the various declared or assumed motivations, and the question of whose perspective is accepted regarding the terrorist offenders' behavior; in other words, one man's terrorist is another man's freedom fighter [28,29]. Nevertheless, two elements are commonly found in contemporary definitions of terrorism: 1. terrorism involves aggression against non-combatants, and 2. instead of accomplishing a political goal, the terrorist action in itself is expected by its perpetrator to influence a targeted audience's behaviors, to meet the goals of the terrorist [30,31].

Terrorism is complex and multifaceted, and actors involved can be classified across multiple variables. Schultz, in Victoroff [32], suggested seven variables (cause, environment, goal, strategy, means, organization, and participation), could be used to classify terrorism into two higher-order types, revolutionary versus sub-revolutionary terrorism. Post, Sprinzak, and Denny [33] divide political sub-state terrorism into 1. social revolutionary terrorism,

2. right-wing terrorism, 3. nationalist-separatist terrorism, 4. religious extremist terrorism, and 5. single-issue (e.g., environmental issue) terrorism and argues that each type tends to be linked to its own social-psychological dynamics. Victoroff [32] identified numerous variables relevant to understanding terrorism and how dimensions of these variables could be classified, such as individual vs group, state vs sub state vs individual, secular vs religious, and suicidal vs non-suicidal.

In Indonesia, Mufid, Sarwono, Syafii, Baedowi, Karnavian, Zarkasih, and Padmo [34] studied terror perpetrators by interviewing 110 terrorists. He found that 87.8% of the terror perpetrators in Indonesia were Muslims, while 12.2% were Christians involved in ethnic-religion conflicts. The majority of terror perpetrators in Indonesia in this study were Indonesians (92.2 percent). The remainder were Malaysians (7%) and Singaporeans (0.9%). Further, most terror perpetrators were ethnically Javanese (43.6%), followed by Pamonese (12.7%) and Malays (10.9%). Buginese and Sundanese respectively constituted 5.5% of participants, while 4.5% were Betawi. The rest, 17.3%, came from various ethnic backgrounds, including Acehnese, Ambonese, Arab, Balinese, Bima, Indian, Kaili, Makassar, Madurese, Minang, and Poso. Moreover, related to age (age of respondents was calculated from the year of their involvement in acts of terrorism), the average age of terror perpetrators was 29.7, with the youngest 16 years and the oldest 64 years. If classified according to the age group, the majority (59%) were young, below 30. Related to level of education, Mufid et al. [34] found that the highest level of educational attainment of most terror perpetrators was senior high school (63.3%), followed by college and university (16.4%) and junior high school (10.9%). In addition, 5.5% of terrorist offenders attended, but did not graduate from a college or university and another 3.6% only graduated from primary school. These findings are similar to research in other countries. For instance, a study of 102 Salafi Muslim terrorist offenders from Saudi Arabia, Egypt, France, Algeria, Morocco, and Indonesia found that the average age of perpetrators (joining in terrorism acts) was 25.7 years, with 18 % described as 'upper,' 55% from 'middle,' and 27% from a 'lower' class [40].

Mufid et al. [34] found that in Indonesia most terror perpetrators had non-religious educational backgrounds. Around 48.2% of terror perpetrators interviewed graduated from secular senior high schools, 18.2% from non-religious colleges or universities, 10.9% from junior high schools, and 6.4% from vocational senior high schools. Only 5.5% graduated from pesantren (Islamic traditional boarding school) and 3.6% from a madrasah (Islamic school). On one hand, this finding does not confirm a common perception held by many (foreign) observers that most Indonesian terrorist offenders came from religious schools, such as madrasah and pesantren. On the other hand, this finding supports a 2010 survey reporting a significant level of radicalism among students of general secondary schools.

## 3. Motivations of Terrorism

Related to typology of terrorist offenders in Indonesia, Mufid et al. [34] reported that the roles of 110 terror perpetrators in Indonesia can be classified into leaders (9.1%), middle management (10%), and followers (80.9%). His study also found various factors that motivated individuals in Indonesia to engage in acts of terrorism: religious-ideological, solidarity-driven, separatist, 'mob mentality', and situational. An 'ideological-religious motive' is defined as the drive to establish the perfect model of religion-based government or society (the establishment of dawlah Islamiyah or the implementation of sharia) where acts of violence or terrorism are considered as a justified means to achieve these ideals. Included in this category is participation in terrorism that is driven by the abhorrence of the Western economy-political domination, cultural hegemony, and military interventions in Arab or Muslim-dominated countries. Participation in acts of terrorism for the purpose of protecting fellow believers from the threat of conversion attempts conducted by other religious communities is also included in this category.

A 'solidarity motive' is defined as the drive to participate in acts of terrorism to express empathy or to help fellow believers, especially in a situation when they are threatened or become victims in a conflict. The 'revenge-seeking motive' is identified as the drive to join in terrorism acts as an attempt to strike back against enemies for losses (of lives or property) that may have been experienced by the terrorist actor or their family. A 'separatist motive' is defined as the drive to participate in terrorism as a way to meet a political goal, of creating a separate state. 'Mob mentality' is the drive to spontaneously participate in acts of violence or terrorism conducted by others, even though the perpetrators do not have clear reasons, their behavior is simply in response to the behavior of others. Finally, 'situational motives' refers to factors that forcibly drive individuals to be involved in acts of terrorism. For example, individuals who are convicted of terrorism offences through association other terrorism perpetrators, even though they do not directly participate in acts of terrorism themselves [43]. Based on the above categories, most terror perpetrators in [44] study

were driven by ideological-religious motives (45.5%), followed by a sense of community solidarity (20%), mob mentality (12.7%), revenge-seeking (10.9%), situational (9.1%), and separatist motives (1.8%). The finding confirms that religious-ideological motives, despite variation of their meanings, were predominant reasons that motivated perpetrators to participate in terrorism acts in Indonesia.

There is certainly no single explanation about why and how Islamic radicalism has come into its existence in Indonesia. Largely, two main factors give the reasons of the emergence of Islamic radicalism, internal and external factors [35]. The internal factors are disputes among Muslim elites which have driven Islamists to revive the spirit of Islam. On the contrary, external factors include outer drives, such as colonialism or invasion [36]. Roy [37] describes that among the leading factors causing cause the birth and rise of Islamic radicalism is external factors beyond religion such as economic discrepancy and social confusion. Ideology serves as a catalyst or mass-mobilizing factor that escalates radicalization level of religious understanding delivered by religious charismatic leaders or ideologues [38]. Dekmejian [39] also previously suggests that there is a continuing pattern of history in the form of a cause-and-effect correlation between social crises and the rise of religious, revolutionary, or revivalist movements. Mufid et al. [34] argue that in Indonesia economic factors such as poverty and social inequality are insufficient structural factors, and do not necessarily contribute to a rise in terrorism. Instead, a combination of structural factors at global, national, and sub-national levels are significant factors for the rise of terrorism.

Religious radicalism in Indonesia has such an extensive history [34]. In contrast with the current Indonesian society, religious radicalism in the colonial period gained support from the majority of people in the country as the radicals was to fight against Western colonialism and to achieve Indonesia's independence in 1945. After Indonesia value freedom of speech in the Era of Reformation followed by economic recession in 1997, Islamic radicalism proves its existence after 'devoid leadership'. The economic crisis was used by some Islamist ideologues to bring together a wider audience. Hizbut Tahrir Indonesia (HTI), for instance, came to Indonesia's political stage with a distinguished slogan: "Selamatkan Indonesia dengan Syari'ah" (Save Indonesia by Applying Sharia Law). Due to the financial crisis, radical Islamists gained support from their sympathizers in promoting their ideology [40].

Ideology-based terrorism in Indonesia is related to a desire to establish an Islamic state or create khilāfah Islāmiyah 'alā minhajin nubuwwah (an Islamic caliphate on the precepts of prophethood). An underground movement in Indonesia, such as Jamaah Islamiyah (JI) and its affiliations, set this goal. JI became an umbrella organization for radical movements with long historical and ideological ties to DI/NII (Darul Islam/Negara Islam Indonesia) [23]. The expansion of terror attacks in Indonesia occurred by targeting individuals including Muslims whom are perceived as thaghut (evil) [23,41,42]. Pepy Fernando's group, for example, committed terror actions through 'book bombs' against individuals suspected of having close relations with the Western thoughts. Packages of book bombs were sent to Ulil Absar Abdallah (an activist of Liberal Islam Network), Ahmad Dani (a musician accused of having Jewish descent), Yapto (a leader of a youth organization), and General Gorries Mere (a police officer regarded as the Western 'puppet' in the war against terrorism in Indonesia) [34].

According to Imam Samudra, Mukhlas, and the perpetrators of the 2002 Bali bombing, the terror actions in Indonesia were justified according to six fundamental teachings of Salafi-Jihadist: 1) the United States and its allies lead a conspiracy to destroy Islam, 2) non-Muslims, including Protestants and Jews, are infidels and enemies of Islam, 3) killing of civilians is allowed if it is part of revenge against the United States and its allies for the killing o of Muslims over the world, 4) both Americans and non-Americans who cooperate with the United States government are enemies because they pay taxes to make war possible and through elections, they choose the government officials who lead the war against Muslims; hence there is no difference between civilians and combatants, 5) Muslim leaders who cooperate with the United States and its allies are thaghut or the enemy of Islam, and must be regarded as infidels, and 6) the death of innocent Muslims during the Mujahidin attacks are acceptable for the sake of Muslim interests [34].

Acts of terrorism committed by Indonesian religious militants in diverse places, targeted various foreigners, involving different actors, with different recruitment techniques; this is demonstrated by the first Bali bombing in 2002, the JW Marriott bombing in 2003, the Australian Embassy bombing in 2004, the second Bali bombing in 2005, and the JW Marriott and Ritz Carlton bombing in 2009. Their goal remains the same, to establish of dawlah Islāmiyah (Islamic State) and implement Shariah (Islamic law) [43-45]. As terror actors engage in various types of crimes (e.g., fa'i and robbery, bombing, murders, and so forth) linked to military trainings/tactics and global networks, terrorism is accordingly seen as a 'non-ordinary' crime [46,47].

During criminal investigation offenders claim that what

they did was not an act of terrorism but based on their understanding of the word 'jihad'. Jihad alone, according to their ideological perspective, is an instrument to pursue a goal to establish an Islamic state and to apply Islamic law [44,47-49]. An act of terrorism committed by a religious group can be regarded as a religious activity since it is based on religious doctrines/principles. Therefore, many perpetrators of terrorism deny that their group's activities contain terrorism [50].

The review of ideology-based terrorism in the context of Indonesia shows that the terrorist offenders are driven or inspired by many factors including religious doctrines, in this case is Islam as the most common religion in the country. The literature review indicates that there are at least three psychological domain of offenders in Indonesia which can be assessed for identifying risks: 1) motivation, related to internal/individual's drivers which may connect with external factors such as political turbulence and economic discrepancy; 2) ideology, related to individual's belief systems and radical doctrines; and 3) capability which includes an individual's hard and soft skills which can be used to support terrorism; therefore this study focuses on '*Motivation, Ideology, Capability* (MIC or MIK in Indonesian spelling) Risk Assessment' or 'MIKRA'. These MIC psychological domains lie within micro level (individual level) regardless the affiliation they are in such as JI, ISIS, and Al Qaeda (external factors).

As this study aims to identify individual terrorism risk factors of offenders in Indonesia, findings may be used by service providers responsible for the design and implementation of terrorism rehabilitation efforts, such as reducing the level of each risk factor to prevent recidivism. The study collected information from Indonesian eminent counterterrorism experts and practitioners, including terrorism intelligence analysts, investigators, and heads of security units who first-handedly examined terrorist offenders' cases. The major question in this baseline study is *"What are the psychological criminogenic risk factors of terrorist offenders in Indonesia?"*.

## 4. Methods

### 4.1 Participants

A total of thirty-two people between the age of 35 and 68 (mean: 46) participated in this study. These participants were eminent Indonesian counterterrorism experts (i.e., counterterrorism senior advisors, intelligence analysts, criminologists, and members of government think tanks), practitioners (i.e., in deradicalization programs and rehabilitations), and professionals (i.e., heads of

government counterterrorism agencies and units) (twenty-seven males, five females). The names of participants were carefully selected based on their nation-wide recognized and documented products (i.e., researches, analysis, investigations, deradicalization programs, open-sourced or security unit internally-used) and official positions in Indonesian counterterrorism. Participants' roles in counterterrorism were diverse, including security analyst, advisor, investigator, deradicalization and disengagement program designer (inside and outside prisons), military commander, theology, counter narrative designer, terrorism prosecutor, special task force/field officer, forensic analyst, intelligence operator, cyber terrorism analyst, and senator member at the House of Representatives. The participants' experiences in counterterrorism ranged from five to thirty years.

### 4.2 Procedure and Material

This study involved counterterrorism experts, practitioners, and professionals. The study included procedures of data collection such as reviewing nation-wide names in the field of Indonesian counterterrorism, approaching and corresponding with candidates of participants, gaining informed consent from participants, and conducting thirty-two semi-structured interviews with participants as data was gathered using this technique.

After reviewing names recommended by Indonesian counterterrorism forums, security units, and executive government think tanks, fifty names of potential candidates were collected. The potential candidates were approached and provided with a description of this study. Thirty-two people expressed their appreciation and interest in taking part in the study; all committed to participate in the study. Appointments in Jakarta, Indonesia, to conduct interviews were then established. Each participant was given a copy of the informed consent form to be signed and asked about the use of recording equipment during the interview. From a total of thirty-two participants, thirty-one participants signed the consent form, whilst one in top-rank ministry position was unwilling to sign which reflects the sensitivity of terrorism research in Indonesia. He requested to have his photograph taken with the researcher to replace his signature in the form. In those cases where the participant refused to sign a consent form, the preparedness to organize a time and place for the interview and participation indicated consent. Given the participants were mostly seniors, these conditions assured consent was informed and voluntary. Furthermore, all participants refused to have the interview recorded. Thus the researcher performed note-taking.

The interviews used the list of questions set in interview

guideline shown in Table 1. The interviews initially asked for participants' comments in open-questions and then probed the participants with further questions. Thirty-two semi-structured in-depth interviews were conducted in four months, from late September until December 2015, and renewed in September 2020 through online during the Covid-19 pandemic. All interviews took place in Indonesia and were conducted in Bahasa Indonesia. Each interview lasted between thirty to ninety minutes. During interviews, most participants provided simple answers due to the sensitivity of issue, culture (Indonesians are not outspoken), and concern of their safety; hence, probes to stimulate participants were needed. The 1st probe was related to the "*central eight*" *risk/need factors* in PCC Theory. The 2nd probe was focused on *Motivation*, the 3rd was *Ideology*; and the 4th was related to *Capability*. Before ending each interview, the researcher read the written notes and showed it to the participant as a verification.

**Table 1.** Interview guidelines for study on risks and needs of ideology-based terrorist offenders

| Questions |
| --- |
| Given your expertise and experiences in the terrorism field, what do you think are the risk factors to be considered when assessing ideology-based terrorist offenders? Can you define each of these risk factors? |
| 1st probe:<br>- What about anti-social attitudes?<br>- What about anti-social peers?<br>- What about anti-social personality?<br>- What about history of anti-social behavior?<br>- What about family or marital factors?<br>- What about the lack of achievement in education or employment?<br>- What about the lack of pro-social leisure activities?<br>- What about substance abuse? |
| 2nd probe:<br>- What about chances to do violence?<br>- What about motives such as solidarity, revenge?<br>- What about vulnerability?<br>- What about superiority or level in terrorism group?<br>- What about support from terrorism group?<br>- What about outreach in terrorism network? |
| 3rd probe:<br>- What about doctrines?<br>- What about targets of enemies?<br>- What about the understanding on contexts?<br>- What about militancy?<br>- What about attitudes?<br>- What about loyalty to leaders? |
| 4th probe:<br>- What about reputation in terrorism group?<br>- What about weapon skills?<br>- What about military training?<br>- What about negatively-interpreted knowledge about religion, war, and strategies?<br>- What about social domination skills, such as recruiting, influencing, and manipulation skills?<br>- What about experiences in combat areas? |

### 4.3 Analysis

This study used qualitative analysis on participants' answers. Qualitative thematic analysis was used to define criminogenic psychological risk factors. A total of 222 risk factors were revealed prior to thematic analysis (TA). As the research is a baseline study which involved multidisciplinary experts/practitioners in counterterrorism, many words mentioned by participants were very technical; hence, the researcher asked for clarification.

In the TA, participants' answers were then tabulated, coded, and categorized into similar themes. *External* 'un-controllable' risk factors (e.g. *recruitment style in groups, networks, chance to commit terror act, support from violent groups*, and *anti-social associates*) were excluded as this study only focused on *internal* risk factors. The TA combined *inductive* (themes were chosen taking from one of the participants' answers which represented the whole idea of risk factors), *deductive* (themes were taken from existing concepts of terrorism from previous researches), *latent* (themes were taken from concepts and assumptions underpinning the risk factors raised by participants), and *constructionist approaches* (themes constructed certain reality created by participants' answer). In other words, a name of the theme might be chosen even though the term was weak in quantity (but strong in quality) because it incorporated a broader meaning or concept, for example the theme '*Mechanical and Electrical (M and E) Skills'* was chosen to incorporate these terrorism skills stated by participants: 1) *"aeromechanical",* 2) *"weapon/gun-assembling",* 3) *"auto-mechanical",* 4) *"electromechanical",* 5) *"mechatronic",* 6) *"technical",* 7) *"aerodynamic"*, 8) *"drone-assembling"*, and 9) *"bomb-crafting" skills*, although the word *"mechanical and electrical skill"* was only mentioned once. This is due to its coverage and presented the eight other words mentioned above.

Themes were then presented to each participant for verification. A round-typed diagram to illustrate themes of risk factors, as seen in Figure 1, was drafted and presented to participants for verification. An interrater judgment by two psychologists (forensic and clinical), eight 'grassroots' deradicalization practitioners, and a psychometrician was conducted for validating themes (content validity) and diagram.

## 5. Results

The results of this study show that there are 18 factors grouped into the following domains: *Motivation, Ideology, and Capability*. Six risk factors could be located within the higher order *Motivation* domain, six into *Ideology*, and six
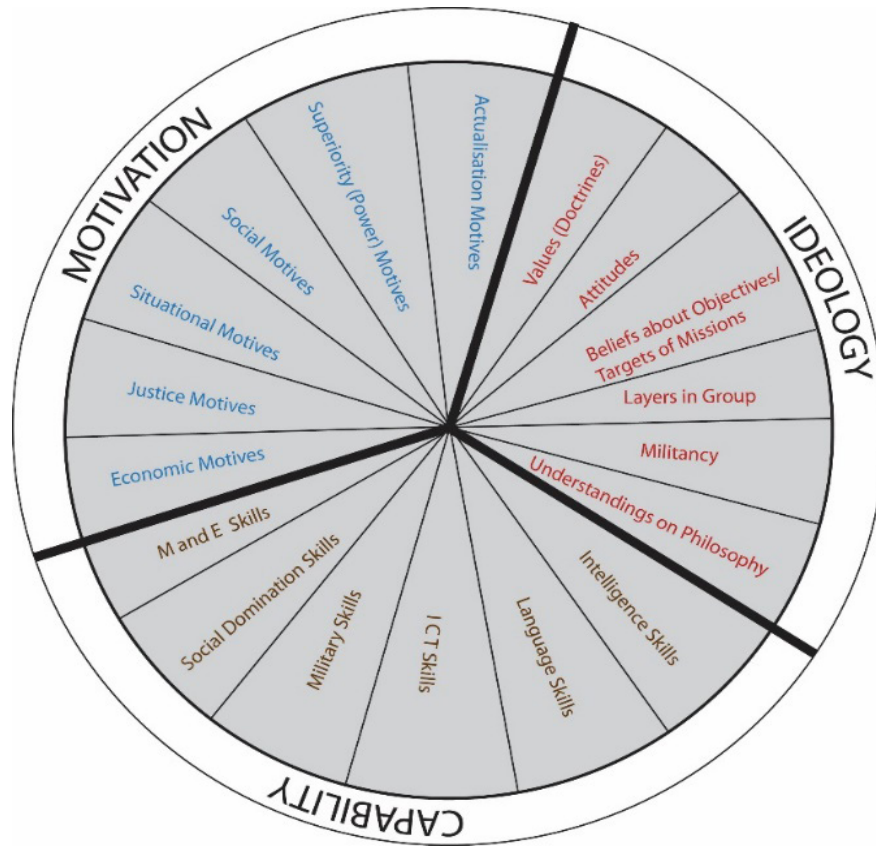
**Figure 1.** 18 Risk factors in *Motivation-Ideology-Capability Risk Assessment (MIKRA)*

into *Capability*. The six *Motivation* factors are *Economic, Justice, Situational, Social, Superiority,* and *Actualization Motives*. The six *Ideology* risk factors include *Values, Beliefs about Purpose, Attitudes, Militancy, Understandings on Philosophy,* and *Layers in Ideological Groups*. The six *Capability* risk factors include skills in *Intelligence, Information and Communication Technology (ICT), M and E, Military, Language,* and *Social Domination Skills*. These 18 risks and need factors and the three higher order domains are presented in a circular model, Figure 1 describes risk factors in this study. Moreover, participants suggested that fulfilment of the needs of offenders in 18 factors would lead to risk reduction which reduces the chance of offenders being visited by counterterrorism practitioners. The study suggests the contentment of needs of terrorist offenders to fill the gap between risk assessment and risk reduction.

**Domain: *Motivation*.**

The domain of *Motivation* covers all motives driving the act of terrorism. *Motivation* is symbolized as "Heart", meaning interests, will, drives, feelings of discontentment, and emotions.

**Risk factor 1: Economic Motives.**

Economic Motives is defined as motives of terrorism associated with economic and biological needs. The scope

of this risk factor includes the following concepts or terms: unfulfillments of basic biological needs, financial motives, poverty, employment problems, perceived economic discrepancies, and economic dissatisfactions.

**Risk factor 2: Justice Motives.**

Justice Motives is defined as motives of terrorism associated with the needs to search for justice. The scope of this risk factor includes revenge and rejection of law, social rules, and regulations.

**Risk factor 3: Situational Motives.**

Situational Motives is defined as motives of terrorism associated with the needs for safety and security. The scope of this risk factor includes the following concepts or terms: unfulfillment of safety needs, insecurity, stress, individual crisis leading to grievance, criminal history, personal vulnerability, emotional instability, personal issues (e.g., family, broken-home, education, immigration, troubled peers, delinquency, adjustments, substance abuse), troubled backgrounds, subjective discrepancy (personal dissatisfactions), and escaping motives (fugitivity).

**Risk factor 4: Social Motives.**

Social Motives is defined as motives of terrorism associated with the needs of social support, sense of

belonging, and social identity. The scope of this risk factor includes the following concepts or terms: unfulfillment of social needs, feeling marginalized or lonely, self-confidence issues, attribution of kindship, affiliation preferences, solidarity, social vulnerability, self-identity issues, and online networks.

### Risk factor 5: Superiority Motives.

Superiority Motives is defined as motives of terrorism associated with the needs for power or reaching a higher position in a social hierarchy. The scope of this risk factor includes the following concepts or terms: unfulfillment of controlling needs, prestige, pride, need for power, seeking for social status, needs to control others, and political motives.

### Risk factor 6: Actualization Motives.

Actualization Motives is defined as motives of terrorism associated with the needs to give impact to others. It includes the following concepts or terms: unfulfillment of actualization needs, needs to contribute, outreaching motives, lack of positive involvement in society, lack of positive organizational experience, lack of self-actualization, adventurous motives, curiosity, and needs for existence.

### Domain: *Ideology.*

The domain of *Ideology* includes religious or spiritual concepts, a system of ideas, commitment, experiences, attitudes, mindsets, and positions constructing legitimation to acts of terrorism. *Ideology* is symbolized as "Head", which explains justifications, knowledge, rationalizations, sense of values or definitions of "right or wrong".

### Risk factor 7: Values (Doctrines).

Values is defined as thoughts, concepts, dogmas, doctrines, and ideas which are favorable to violence. This includes the following concepts or terms: violent-related beliefs/doctrines, low sense of spirituality, spiritual immaturity, takfiri, hakimiyyah, intolerance to outer circle, anti-coexistence, anti-establishment, religious radicalism, lack of personal introspection, narrow-mindedness, rigid thinking, black-and-white way of thinking, violence-dominated interpretations of sacred texts, tendency to choose the most harsh religious practices, undermining bloodshed, rejection of ethics/norms/laws, non-citizenship behavior, and exclusiveness.

### Risk factor 8: Violent Attitudes.

Violent Ideology-Driven Attitudes is defined as attitudes toward outside social group driven by thoughts, concepts, dogmas, doctrines and ideas which are favorable to violence. The scope of this risk factor includes the following concepts or terms: non-cooperativeness to outer circle, aggressions, rejection of contacts/visits and favors from outer circle, selective kindness (only to inner circle), anti-social attitudes, and hatred towards outer circle.

### Risk factor 9: Beliefs about Objectives (Targets of Missions).

Beliefs about Objectives is defined as goals or targets in life driven by thoughts, concepts, dogmas, doctrines, and ideas favorable to violence. Their scope includes the following concepts or terms: purpose of life, ultimate goals, violence-related visions, destructive plans, violence-related missions, instrumental goals, targeted victims/perceived enemies, targeted media/equipment, targeted modus operandi/means, violence-related deadlines, and planned actions.

### Risk factor 10: Layers in Ideological Groups.

The definition of this risk factor is positions in violent ideological group(s) which describe roles, status, involvement, grades, layers, levels, tasks, and ranks. Its scope includes the following concepts or terms: roles in terrorism, status in terrorism networks, involvement in terrorism networks/criminal offense/military training/local or global conflicts, levels of seniority in terrorism groups, duties/ranks/grades in ideological groups, outreach in terrorism networks, and reputation in ideological groups.

### Risk factor 11: Terrorism Militancy.

Militancy is defined as resistance to alter thoughts, concepts, dogmas, doctrines, and ideas which are favorable to violence. Its scope includes the following concepts or terms: devotion to higher figure(s) in terrorism networks, violence-related risk-taking, resistance to positive changes, anti-dialogue/negotiation, and rejection of positive opportunities.

### Risk factor 12: Understandings on Philosophy and Contexts.

This risk factor is defined as the lack of understandings of religious philosophy and its implementation in various contexts. In Indonesia, this factor means the lack of contextual insights and understandings on 1) Pancasila the national constitution; 2) Undang-Undang Dasar 1945 the basic law; 3) Negara Kesatuan Republik Indonesia (NKRI), the official name of the country; and 4) Bhinneka Tunggal Ika or "Unity in Diversity", the official national motto. These are four fundamental national consensuses set by the founding fathers of Indonesia. The scope of this risk factor includes the limited understandings of religious concepts/teachings, various contexts (time and place) of religious practices, local wisdom, the philosophy of Islam, the spirit of national consensuses of Indonesia, Pancasila, UUD 1945, NKRI, and Bhinneka Tunggal Ika, Indonesian history, anthropology of religions in the world, Islamic history (tarikh Islam) and anthropology, and interpretations of sacred texts. It is also described by lacks ability in conceptual/abstract thinking regarding philosophies of religious values, critical thinking,

accepting critiques and feedback, and performing cost-benefit analysis in making decisions.

**Domain:** *Capability.*

The aspect of *Capability* covers skills used in terrorism. *Capability* is symbolized as "Hand" reflecting the fact that these capabilities are things that can be performed by hand or equipment, power, or physical sources.

**Risk factor 13: Intelligence Skills.**

The definition of this risk factor is skills to acquire, collect, manage, store, retrieve, combine, compare, distribute, build, and use information including complex data, which can be to manage a terrorism activity. Their scope includes skills in data gathering, processing, analysis, interpretation, and management. The scope also includes skills in Big Data management, disinformation, spying, conditioning, counterintelligence, surveillance, decision making, problem solving, and counter-deradicalization.

**Risk factor 14: Language Skills.**

The definition of this risk factor is skills of listening, reading, speaking, and writing in multiple languages, which can be used to manage a terrorism activity. Their scope includes listening, speaking, writing, reading, translating, journalistic, literacy, and public speaking using multiple languages.

**Risk factor 15: ICT (Information and Communication Technology) Skills.**

This risk factor is defined as skills in using and creating Information and Communication Technology, such as computers, programs, cyberspace, Information Technology (IT) and Dark Web, which can be used to manage a terrorism activity. Their scope includes skills in Information Technology (IT), social engineering, computer coding and decoding, digital forensic, cyber defense and security, ICT security-analysis, cryptography, crypto analysis, cyber-virus making, steganography and watermarking, web development, cyber-attack/hacking, Big Data development, and drone-making.

**Risk factor 16: Military Skills.**

Military Skills are skills operated in physical fighting, battlefield, warfare, and conflicts, which can be used to manage a terrorism activity. Their scope includes knowledge and experience in physical toughness, field engineering, defense, martial arts, battlefield, war tactics, psychological warfare, weapon shooting, Chemical Biological Radioactive Nuclear and Explosive (CBRNE) such as poison-making, bombs designing, survival, war strategies, weapon technology, guerilla, disabling security, trap making (e.g., booby trap), and military training.

**Risk factor 17: Social Domination Skills.**

This risk factor is defined as skills of influencing others, such as persuading, negotiating, recruiting, mobilizing, leading, manipulating, controlling, and financing people, which can be used to manage a terrorism activity. Shown in its name, this risk factor's scope includes skills in human-approaching, social networking, financing, propaganda, and micro expressions (understanding people). Their scope also lies in skills in directing, coordinating, guiding, and even brainwashing people.

**Risk factor 18: M and E (Mechanical and Electrical) Skills.**

This risk factor is defined as skills of using and creating technical, mechanical and electrical equipment, which can be used for managing a terrorism activity. Their scope is described by aeromechanical, weapon/gun-assembling, auto-mechanical, aerodynamic, mechatronic, electromechanical, and bomb-crafting skills.

## 6. Discussion

There remains a deficiency of empirical research into terrorism related to structured examination of psychological risk factors for terrorism [5]. These risk factors are beneficial to formulate risk assessments to terrorist offenders and design interventions/responsivity [51]. Monahan [5] suggests that criminogenic psychological risk factors for terrorism must be identified prior to create terrorism risk assessment/instruments. In Indonesia, assessments to terrorist offenders and foreign terrorist fighters are still unclear. Current instruments for CVE in the country are basically focusing on religious radical extremism, not the risk and need factors of offenders after being detained [13].

This study examines psychological criminogenic risk factors and needs ("Risk-Need") of terrorist offenders in Indonesia inspired by Risk-Need-Responsivity (RNR) Model by PCC Theory by Andrews, Bonta, and Hoge Bonta [25,51] which emphasizes the identification of *Risk* and *Need* of criminal offenders prior to *Responsivity* or rehabilitation. This study can help in setting up future parameters of effective terrorism rehabilitation in Indonesia. Moreover, the study can be replicated in any countries to understand the risk/need factors in other contexts.

This study identifies 18 individual risk/need factors of ideology-based terrorist offenders in Indonesia that are grouped into three higher order domains: *Motivation, Ideology,* and *Capability*. Participants described *Motivation* as the "heart" which means interests, wills, drives, feelings of discontentment, unfulfillment of certain needs, and emotions favorable to support terrorism. Moreover, *Ideology* domain or the "head" encompasses religious and spiritual concepts, a system of ideas, knowledge, the definitions of "right or wrong", and a

sense of values determining attitudes. The last domain, *Capability* or the "hand" contains all abilities supporting terrorism which can be hard and soft skills.

The results of this study reveal 18 individual risk factors and needs of ideology-based terrorist offenders in which the first six are classified as *Motivation*, the second six as *Ideology*, and the rest as *Capability*. The first six risk factors are: 1) *Economic,* 2) *Justice,* 3) *Situational,* 4) *Social,* 5) *Superiority*, and 6) *Actualization Motives*. These risk factors are closely related to motives by Maslow [52] as basic human needs before introduced to any knowledge on religious teachings.

The second six risk factors found in this study are: 7) *Doctrines,* 8) *Targets of Missions,* 3) *Attitudes,* 4) *Militancy,* 5) *Understandings on Philosophy and Contexts,* and 6) *Layers in Ideological Groups*. This supports several scholars' studies that ideology and belief systems play an important role in causing terrorism including in Indonesia [24,34,43,45-48,53-60]. The findings also support Rokeach's [61] Belief System Theory which highlights the importance of values/ideology in the study of social attitudes and behavior. In Indonesia, the description of terrorism *Ideology* of terrorism focuses on violent doctrines which are in contrast with the sacred foundational philosophical values of Indonesia: Pancasila [24,62-64]. Pancasila as an abstraction of Indonesian ancient wisdom and philosophy (*Pancasila* means "Five Fundamental Commandments") includes Five Principles: 1. Belief in one God, 2. Human Rights, 3. Unity in diversity, 4. Consent and democracy, and 5. Social prosperity; therefore, it has adopted religiosity as its elements [65-68]. Unfortunately, Pancasila still cannot satisfy the mind of Indonesian Islamic violent extremists as it does not literally state the implementation of sharia laws; hence, the Indonesian government and its people are perceived as secular (deserve attacks) according to them [44,69].

The last six risk factors identified in this study are skills in: 1) *Intelligence,* 2) *ICT,* 3) *M and E,* 4) *Military,* 5) *Language,* and 6) *Social Domination*. In this finding, the study shows its uniqueness by listing the terrorist offenders' possible technical skills in details, such as auto-mechanical, coding, digital forensic, drone-making, hacking, financing, and CBRNE skills. The results include the previous findings of terrorism capabilities [70-75].

Due to the limited research on terrorism risk factors locally and internationally [5], this baseline study can be regarded as a reference for future development of terrorism risk assessments. Published information about terrorism risk assessment and their items are limited [76,77] and risk/need assessments of terrorist offenders within security agencies usually are not released or available for public review, collection, or comparison

[78], therefore this study becomes considerably important. Furthermore, as the study uses qualitative approach, the results provide a rich information about targeted risk/need factors of terrorists which can accordingly become the future objectives for rehabilitation or deradicalization in Indonesia. Referring to Meehl's [79] view about risk factors, the risk factors explored in this baseline study were dynamic or clinical rather than actuarial ("statistical"). The results provide guidance for assessors to consider risk and need factors in each domain of offenders and to help assess progress (by comparing risk/need factors before and after rehabilitation). If quantification is considered beneficial then further research needs to be conducted to elucidate the quantification of MIC risk assessment.

Taking place in Indonesia as the largest Muslim population before and during pandemic, the study sharply prioritizes both online and offline risk factors. It focuses its attention only on relevant risk factors in the domains of *Motivation, Ideology,* and *Capability*. The study eliminates several variables when examining terrorists, such as marital status, gender, and social class [32,80-86].

The study facilitated open discussion among cross-sectional Indonesian professionals in terrorism and gave these participants the opportunity to provide opinions on sensitive issue such as Islamic radicalism. The qualitative approach of this study gives each risk factor an equal value/quality, which means there is no risk factor that is more/less important than others. For practical advantages, this will help Indonesian practitioners coordinate and eradicate 'sectoral-ego' in counterterrorism efforts because everyone's role (e.g., psychologists, lawyers, clerics, police, social workers, military officers) is important to modify the behaviors of terrorists.

The results of this study are in line with findings in the previous study by Sukabdi [87] which involve terrorist offenders as participants. When asked about the differences/changes before and after deradicalization, the offenders in the study explained that the following issues were critical that needed intervention in the beginning of their arrestment: Lack of positive purpose of life, Lack of self-introspection, Limited critical thinking ability, Lack of independence against radical networks, Incomplete achievement in society, and Lack of life improvement. All these risk factors have been included comprehensively in the current study. Moreover, using humanistic psychology approach and viewing each offender as an active agent capable of generating a 'free will' and independent responses to a variety of stimulations/environments [88-93], the study excludes external risk factors such as recruitment style and terrorism networks/affiliations. Therefore, the study takes no account of networks-grouping issues such

as 'ISIS vs non-ISIS'.

*Q*ualitative method used in this study helps in generating 'systematic broader, clearer, and operational' risk factors which gather together and combine all issues identified by various scholars in terrorism field [2,5,56,95-97]. Borum [94] in his Four-Stage Model of the Terrorist Mindset, for the 1st example, suggested that *Grievance* that is transformed into three issues: 1) *Perceived injustice* ("It's not fair")*,* 2) *Target attribution* with external Locus of Control/LoC ("It's your fault")*,* and 3) *Devaluation* of people ("You're evil") would facilitate a justification for aggression. The 2nd example, Horgan [56], hypothesises that these following issues: *Values*, *Dissatisfaction* (e.g., social or political), *Vulnerability*, *Identification with victims* (*Solidarity and Needs for justice*), *Social motives*, and *Targets* are crucial in the psychology of terrorist offenders. The 3rd example, McGilloway, Ghosh, and Bhui [2], highlight individual's *Vulnerabilities* as the variable that increases the exposure to radicalisation. The 4th example, Monahan [5], states that *Ideologies, Affiliations, Grievances,* and *Emotions* are individual variables that need assessment in the offenders. The 5th example, Pressman and Flockton [95] set Beliefs and Attitudes, Context and Intent, History and Capability, Commitment and Motivation, and Protective Factors as categories of items in Violent Extremism Risk Assessment (VERA). The last example, Silke [96], underlines *Social identity, Marginalisation, Discrimination, Perceived injustice or Revenge, Status and personal rewards* as elements determining why certain individuals involve in terrorism.

A further research on the most appropriate skill set when assessing each risk/need factors is accordingly necessary. Further studies in other regions with different systems, replicating the current research, are also needed to examine the generalizability of certain risk factors. *Economic* and *Justice Motives* for example, is crucial in the context of Indonesia where poverty, malnutrition, and inequality are still issues faced by the country [97-101]. Moreover, further studies of MIC risk factors in the countries where an ideology other than Islam (i.e., *Buddhism, Communism, Judaism, Supremacism*) is used to justify violence is recommended. These studies may capture different risk factors for each type of terrorism mentioned earlier by Victoroff[32].

## 7. Conclusions

This study recognizes eighteen individual risk and need factors of ideology-based terrorist offenders. The eighteen risk and need factors are clustered into three higher domains: *Motivation, Ideology,* and *Capability. Motivation* is the interests, wills, drives, feelings of discontentment, unfulfillment of certain needs, and emotions favorable

to support terrorism. *Ideology* is religious and spiritual concepts, a system of ideas, knowledge, the definitions of "right or wrong", and a sense of values determining attitudes to support terrorism. *Capability* consists of abilities which may support terror actions.

The results of this study disclose eighteen individual risk and need factors of offenders. The first six factors are in *Motivation*, the second six are in *Ideology*, and the last six are in *Capability*. The first six risk factors are: 1) *Economic,* 2) *Justice,* 3) *Situational,* 4) *Social,* 5) *Superiority*, and 6) *Actualization Motives*. The second six risk factors are: 7) *Doctrines,* 8) *Targets of Missions,* 3) *Attitudes,* 4) *Militancy,* 5) *Understandings on Philosophy and Contexts,* and 6) *Layers in Ideological Groups*. The last six risk factors are skills in: 1) *Intelligence,* 2) *ICT,* 3) *M and E,* 4) *Military,* 5) *Language,* and 6) *Social Domination*.

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ARTICLE

# The Mindset of Innovation: Contributions of Cognitive and Social Psychology

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ABSTRACT

In order to consider anything as new, individuals have to accept it as possible. To consider it as innovative, a person has to see it as necessary. These two concepts, derived from Piaget's theory (1987), are key elements for the analysis of innovation mindset. Theoretical framework explains how "opening up for new possibilities" implies overcoming pseudo impossibilities, and how possibilities are built up alongside individual development. In short, an innovation has to be considered possible and necessary, feasible and viable. Thus, the cognitive processes involved in defining what is possible, and accepting what doesn't have to be the old way, are crucial mental structures subjacent to innovations' decision making. This study examines mindset through mental models, cognitive processes and executive functions, as well as Piaget and Gestalt theory's contributions. The empirical investigation involved a search for articles published on the theme between 2019 and 2021, concluding that they apply the innovation mindset definition, taking for granted the psychological mechanisms inlayed in it. The article also points up to the gap between management and psychology, indicating the urgent need of interdisciplinary studies, due to the mutual benefits for both sciences and also, better comprehension of the constructs.

## 1. Introduction

Traditionally considered as a topic of management studies, innovation gets, here, a new approach, through the lens of cognitive and social psychology. Besides understanding why and how people create startups, new artifacts, or studying how to enhance the key factors which can lead to more successful businesses, the investigation of the mindset of innovation brings up classical scholars of cognitive psychology, as Piaget, and mental models, as in Johnson-Laird, to discuss this kind of mindset.

Although some of the articles, published on this subject, point it up to social psychology behaviors of an innovative person [1] or to the personality traits favorable

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to it [2], they do not approach the psychological theories from which the concepts are originated.

The present study goes deeper and further, aiming to understand the cognitive facets of the mindset of innovation. With this purpose, Piaget's theory opens up the investigation. Recognizing possibilities, as well as overcoming pseudo impossibilities, are the core elements for innovative way of thinking.

From the theory of executive functions, stands out the concepts of mental flexibility, self-regulation and choice, which help understand the dynamic of mind favorable to innovation.

Mental models, studied, among others, by Johnson-Laird, follows the analysis, adding issues as inference, premises, which, related to innovation mindset, may lead, eventually, to cognitive biases.

Gestalt's theory, with the concepts of productive thinking, elucidates the fact that innovation, as a figure, has to be seen together with its ground, that is, the context in which it comes up. The dynamic of figure – ground has to remain flexible, changing with each new figure, or with the shifts in the context or environment in which innovation is inserted. As the scenarios are extremely volatile, this mental flexibility is crucial for as innovation mindset.

Those important theoretical contributions do not show up in the articles analyzed through mindset innovation's lens, as shown in the results.

## 2. Objective

The present article presents Gestalt's theory, mental models, and executive functions theory, as well as Piaget's contributions, discussing how they relate to the mindset of innovation, an important issue of innovation management. Through the analysis of articles published between 2019 and 2021, it aims to identify the presence – or absence - of these theoretical aspects in the studies.

## 3. Material and Methods

As a qualitative study, the present study initially describes the theoretical framework, regarding psychological aspects of innovative mindset. This step generated six key words, which were the basis of search in articles published on top Journals on Management Innovation and Psychological Research about the subject, between 2019 and 2021.

## 4. Theoretical Framework

In this section, first, theoretical aspects are presented, followed by the key words extracted from it, to embed the research of the articles about the mindset of innovation.

### 4.1 The Mindset of Innovation: Design Thinking

One of the most popular approaches towards innovation is design thinking. Tim Brown, from IDEO consulting company, defines it as "a human-centered approach to innovation that draws from the designer's toolkit to integrate the needs of people, the possibilities of technology, and the requirements for business success" [3].

As in Figure 1 below, each circle refers to one of these attributes of innovation: feasibility (technical), viability (business), desirability (human):
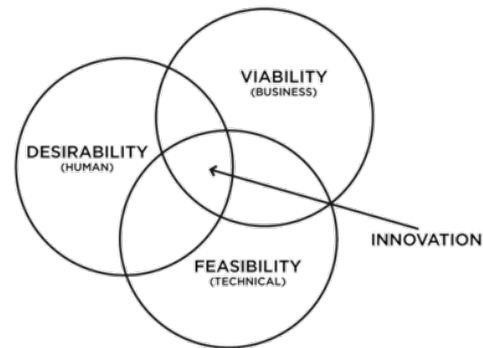


**Figure 1.** Design thinking. Source: IDEO

All the attributes are integrated and have to be seen as so. Deciding what is desirable and what is not is a subjective mental operation Gestalt's theory helps to explain. Business viability, by its turn, demands analyzing premises and making inferences, among other mental operations, which the theory of mental models supports well. Moreover, feasibility depends on a mindset open to possibilities, as well as to overcoming pseudo-necessities and pseudo-impossibilities. Thus, Piaget's study supports the analysis and opens up the theoretical framework of present study.

The mindset of innovation: Piaget's contributions

In one of his latest papers, Jean Piaget, great epistemologist and cognitive psychologist, presents a comprehensive study on how two linked sets of abilities develop:

a. The ability to think about how things might be, or might have been, different from the way they are;

b. The ability to notice limitations on possibilities, i.e. what is necessary or impossible" [4].

Piaget based his work on a series of experiments with children, who performed differently, according to their chronological ages, corresponding to stages of cognitive development. In other words, subjects of the experiments responded to problem setting, recognizing – or not – possibilities and facing pseudo impossibilities, according to an order of phases [5].

Possibilities can always be actualized, due to potential forces of matter, here understood as substance. That is to say, any substance can assume many and different shapes, explaining why creative solutions bring about new possibilities of matter, for example.

Understanding the essence of something is crucial to analyze innovations, because of the trans-formation of the object, be it a new shape, color or packing, which will be called incremental innovations, or a radical, breakthrough change at its core substance / matter.

By distinguishing possibilities from pseudo possibilities, and necessities from pseudo necessities, [5] open up new avenues for comprehension of innovative mindsets.

Say the authors: "For subjects of level 1, pre-operatory, […] the central difficulty [is]: real is what it is, and it is necessary that it is this way, thus, excluding other possibilities". In other words, pseudo necessities pop up, and the child can't imagine other solutions, due to the pseudo impossibility.

It is possible to classify these "subjective" impossibilities or pseudo impossibilities in two categories: a) the person believes, wrongly, that something is possible, and b) he (or she) believes it is impossible, because, supposedly, it corresponds to pseudo necessity[①].

Piaget's cognitive theory defines necessity as a product of subject's inferential compositions, that is, also, non-observable. Observable and generalizable are more or less synonyms, according to a person's point of view, but what is general is not necessarily necessary; thus, its assimilation can lead to pseudo-necessities [5].

Subjects of next level (of cognitive development) are able to reflect, asking if the thing has to be that way, or if there are other possibilities derived from the reflection. Curiosity is a natural consequence of this process and enhances creativity, as well.

In Piaget's theory, reality is a subjective construction. In order to attain more objectivity in adult's life, during his (or her) development, a child must overcome pseudo-necessities and pseudo-impossibilities, as a way to, mentally, form new possibles [6].

According to this theory, an adult who overcomes those pseudo-impossibilities is more likely to maintain the flexibility of thought, be at his (or her) projects, or at coping with adversities, without stiffness they can cause.

In sum, creativity and mental flexibility is continuous actualization of possibles, through overcoming pseudo-necessities [5].

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① In this case, the person believes that the substance, thing, person, or situation, needs to be that way (shape, color, matter, are examples of those "need to be" this way; the belief is that's how reality is).

Piaget's theoretical framework explains how "opening up for new possibilities" implies overcoming pseudo impossibilities, and how possibilities are built up alongside individual development. Moreover, this same framework contributes for better comprehension of the evolution of necessary, which is parallel to possible. In short, an innovation has to be considered possible and necessary, feasible and viable. Thus, the cognitive processes involved in defining what is possible, and accepting what doesn't have to be the old way, are crucial mental structures subjacent to innovations' decision making.

From Piaget's theory derives the key-word pseudo impossibilities to the article's search, explained in Methods section.

Piaget's theory is only one of the important contributions of Cognitive and Social Psychology to the study of the mindset pro-innovation. Following, the present paper discusses executive functions with the same purpose.

## 4.2 The Mindset of Innovation: Executive Functions

"Executive functions (EFs) enable mentally playing with ideas; taking the time to think before acting; meeting novel, unanticipated challenges; resisting temptations; and staying focused" [7].

Cognitive flexibility implies creatively thinking "outside the box," seeing anything from different perspectives, and quickly and flexibly adapting to changed circumstances. Besides, a response inhibition helps in self-control— resisting temptations (the first idea which comes to mind is not always the best one), and resisting acting impulsively. In problem solving, interference control means keeping selective attention and cognitive inhibition.

Important to say EFs are trainable and can be improved with practice, including diverse methods tried thus far [7]. All of them depend upon overcoming pseudo impossibilities and pseudo necessities, as well.

From executive functions' theory, the expression mental flexibility pop-up and was included in the article's search, explained at Methods.

## 4.3 The Mindset of Innovation: Self-regulation and Choice as Executive Functions

Self-regulation is another one of the self's major executive functions. It refers to its active, intentional aspects [8] and "may be thought of as that part of the self, which is ultimately responsible for the actions of the individual".

The other major executive function of the self is choice. "Not only may a self-initiate behavior or control it, but

a self also is responsible for deliberating and making choices from among the universe of possible options" [8]. For the authors, choice and self-regulation are intertwined, and they often work in concert to achieve novelty and diversity in human behavior.

Executive function is also called the "agent" or "agentic aspect." The first aspect of self was a knower and a known, the second a belonger or member, but this third aspect is a doer. By means of its executive function, the self exerts control over its environment (including the social environment of other people), makes decisions and choices, and regulates itself [8]. Concepts like self-efficacy and agency [9], locus of control [10], and others, could enhance deeper comprehension of this particular executive function.

"Self-regulation refers to the self altering its own responses or inner states. Typically, this takes the form of overriding one response or behavior and replacing it with a less common but more desired response" [8].

Technically speaking, a self does not regulate itself directly, but it may control behaviors, feelings, and thoughts that it comprises. In this sense, self-regulation refers to the regulation of processes by the self.

Authors also state: "When self-regulation works well, it enables people to alter their behavior so as to conform to rules, plans, promises, ideals, and other standards. When it fails, any one of a broad range of human problems and misfortunes can arise" [8].

Important to notice that being agent also depends on overcoming pseudo impossibilities in this sense.

The authors discuss self-regulation in the context of (supposedly) irresistible impulses: "In everyday life, people seem to have a ready explanation for failures at self-control: 'I couldn't resist'. [It means] that certain impulses are irresistible, and so they overwhelm the powers of the self. This view depicts self-control as a struggle between the strength of the impulse and the strength of the self, and whether the person resists temptation depends on the strength of the impulse. Somehow, apparently, neither nature nor nurture has provided people with strong enough power to resist many of the temptations they encounter, or so they say".

The statement confirms the importance of the development of executive functions for innovation mindset, because, as mentioned above, the first idea, which comes to mind, is not always the best one; thus, resisting acting impulsively can be detrimental to new ideas [8].

Self-regulation was the expression selected for the search, as explained at Methods section.

## 4.4 The Mindset of Innovation: Mental Models

That is the nature of many problems about the mind: we are so familiar with the outcome of its operations, which are for the most part highly successful, that we fail to see the mystery [11].

Human beings form mental models, which enable them to understand discourse, and both the real and the imaginary issues. The problem with those models relies on internal consistency versus reality.

Mental logic, that is, logic laws, are different from physical laws, because mental entities are representation of something and, from the object to its mental representation, different laws and potential biases operate in the inner world of a subject.

The many different logics of different subjects can be explained by the resolution of possibility / necessity binomial. Both axiomatic reasoning (true x false), and inference processes show the cognitive stage of an individual and the resolution he (she) achieved.

From the definition of inference, it is possible to understand the problem of internal consistency versus reality, and apply this understanding to innovation mindset.

According to Johnson-Laird [11], inference is "a process of thought that leads from one set of propositions to another". Typically, it proceeds from several premises to a single conclusion, though sometimes it may be an immediate step form a single premise to a conclusion. In this process, mistakes correspond to invalid conclusions, even if they are based on valid premises. The author explains: any argument is guaranteed by the inexistence of a counter-argument, that is, the inference is valid if there are no premises, which deny the conclusion. According to the author, seeking confirmation is different from not disconfirmation Johnson-Laird [11]. That's why, whenever dealing with this mental process, one should look for a counter-example. That explains why spontaneous inferences, as heuristics, can be fallacious.

Interesting to say that in most apps, the auto-correct function can lead to mistakes: the individual is trying to express something, when the app completes the word, phrase or sentence automatically, according to the artificial intelligence database. The human-machine relationship is influenced, according to Johnson-Laird [11], by the following: if the inference rule is active in one's mind, it will be automatically applied, regardless of the proposition's content. The same phenomenon can happen when the individual is reasoning or making decisions, pointing out to resisting temptations, one of the executive functions, previously mentioned.

In short, "reasoning depends on imagining the possibilities compatible with the premises, and drawing conclusions from these mental models" [12].

Moreover, according to the mental-model theory of deductive reasoning, "reasoners use the meanings of assertions together with general knowledge to construct mental models of the possibilities compatible with the premises. Each model represents what is true in a possibility. A conclusion is held to be valid if it holds in all the models of the premises" [12].

Important to detach this last conclusion as related to Piaget's theory of possibilities, although it points up to the biases, which may come up when reasoning about what is possible, based on false premises, leading to pseudo-impossibilities, for instance.

Within the subject of mental models, Besnard, Greathead & Baxter (2004) [13] highlighted a psychological phenomenon affecting the accuracy of mental models. "It occurs when two consecutive events happen as expected by an operator. Typically, such a situation reinforces the confidence in one's mental model. However, consecutive events can happen as a random co-occurrence, for reasons that actually differ from the ones believed by the operator. Nonetheless, because of the consistency between the environmental data and the operator's expectations, one event can be taken to be the cause of the other. When this false belief happens, the mental model is erroneously assumed to be valid". They discuss this phenomenon and its potential disastrous consequences, concluding, "Humans tend to consider that their vision of the world is correct whenever events happen in accordance with their expectations" (p. 2) [13]. Besides, "humans tend to treat the available evidence as exhaustively reflecting the world, erroneously believing that they have understood the problem at hand". Obviously, this mindset is not favorable to innovation.

Inference was selected as a key word for the empirical research, explained at Methods.

## 4.5 The Mindset of Innovation: Gestalt's Contribution

As a theory of perception, Gestalt's principles are important tools for those who are interested in innovation, because perception is not a faithful copy of reality, and, thus, realizing what is new, as well as distinguishing it from habitual objects, is always challenging.

Gestalt, school of psychology founded in the 20th century, provided the foundation for the modern study of perception. Gestalt theory emphasizes that the whole of anything is greater than its parts. That is, the attributes of the whole are not deducible from analysis of the parts in isolation.

The word *Gestalt*, in modern German language, means the way a thing has been "placed," or "put together." There is no exact equivalent in English. "Form" and "shape" are the usual translations. In psychology, the word is often interpreted as "pattern" or "configuration" [14].

Differentiating sensation, captured by human senses and explained by physiology, from perception, a psychological phenomenon, Gestalt founders [15-17] introduced one of the most important paradigms in psychological science, that is, what is real for an individual is not necessarily identical to what is captured by his (or her) senses.

For those pioneer scholars, reality is codified by complex mental processes, which occur between stimuli, captured through sense organs, and the perception of them.

Originality, one of the main attributes of creative ideas and, thus, to innovation, is not easy to identify, because it frequently defies logical reasoning. So, the challenges of any evaluation process includes dealing with the influence of stereotypes, prejudices, previous experiences, cognitive biases, and other cognitive mechanisms.

Gestalt theory tries to understand the laws of our ability to acquire and maintain meaningful perceptions in an apparently chaotic world. Its central principle is that the mind forms a global whole with self-organizing tendencies. Moreover, Gestalt's law of past experience implies that under some circumstances visual stimuli are categorized according to past experience and says that If two objects tend to be observed within close proximity, or small temporal intervals, the objects are more likely to be perceived together, as in Figure 2, below.
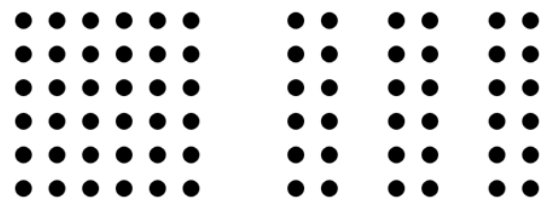


**Figure 2.** Gestalt's law of proximity (author).

Another important contribution of Gestalt theory is the distinction between reproductive and productive thinking. The first one considers solving a problem with previous experiences and with what is already known, while a productive one involves solving a problem with insight. Reproductive thinking is the most common way of thinking. For example, when a person is given several segments of information, he/she deliberately examines the relationships among its parts, analyzes their purpose, concept, and totality, he/she reaches the "aha!" moment,

using what is already known. Understanding, in this case, happens intentionally by reproductive thinking. Productive thinking implies quick insightful unplanned response to situations and environmental interaction.

Although reproductive thinking is the most common way of reasoning, it is far from being the best one for decision-making about innovative ideas, for obvious reasons.

To detect and perceive new as, indeed, new, implies a process involving figure and background, that is, the innovative "object" tends to be opposed to the previously existing, or known, one, or compared with earlier mental images catalogued by the brain.

Figure – ground segregation is also a concept, which explains how defined and salient figures are perceived against undefined grounds, once those "objects" can only be noted when separated from their grounds. Figure, in this case, alludes to what is perceived by the individual (or the individuals, in general), while ground relates to the context in which the object is engraved. A didactic and very well known example is the Rubin vase (Figure 3), developed by the Danish psychologist Edgar Rubin, presenting to an observer two valid interpretations: a vase silhouette (chalice) or the profile of two human faces [②].



**Figure 3.** Vase of Rubin [18].

The Rubin vase shows the displacement of observer's focus point implies the perception of one – or other – figure, meaning the interference of subject's perspective or point-of-view, consequently overcoming a simple capture of stimulus by sense organs.

An example of how Gestalt's theory contributes to the comprehension of innovation management refers to the

② The phenomenon, studied by Rubin, and also by many other scholars of Gestalt's theory Gestalt (Wertheimer & Wertheimer, 1959; Koffka & Cabral, 1975; Kohler, 1980) was the optic illusion

process of design thinking, mentioned above. As a verb in German, Gestalten means get into a form. One of the phases of design thinking, prototyping, means giving format to ideas, which, then, can be tested in "real world", proving to be viable, possible, or being discarded, for not fulfilling one of the criteria – feasible, viable, or desirable.

Figure-ground and productive thinking were the expressions which derived from Gestalt's theory for the research on innovation mindset.

## 5. Results

As previously mentioned, from theoretical framework presented, emerged the words and expressions: a) pseudo impossibilities; b) mental flexibility; c) Self-regulation; d) inference; e) figure-ground and f) productive thinking. Each of them was introduced in the search mechanism of the selected Journals, aiming to realize if they embedded some of the articles published on innovative mindset studies.

A previous research, through Google Scholar focused in the articles published on the subject within 2019 – 2021 period, in order to identify their presence or absence of those terms as part or as foundations of the reasoning.

Next step consisted in identifying the top Journals with most publications on theme, in the period.

With the expression "innovation mindset" in the title, Google Scholar showed six articles and with this expression in the content, four.

Next step, identifying if those publications share a common Journal, resulted none. Thus, the ten articles, plus the ten Journals, were searched with the key words and expressions previously detected. As a complement, the search included the names of Piaget and Gestalt, again with no results.

Results are shown in Table 1 below, followed by comments.

As shown in Table 1, the majority of the articles does not mention any of the psychological aspects pointed up by the theories previously approached, be Gestalt, Piaget or mental models. Nevertheless, some of them allude to other important issues not considered when theoretical framework was built.

One good example appears in Eason & Mazzei (2019) [21], who include in their study the cognitive biases, a contemporary subject for Behavioral Economy, or Economic Psychology. Also, Harsono & Fitri (2020) [22] include the resilience as a subject in their study, enhancing, thus, the theoretical field.

By its turn, the article of McLaughlin & McLaughlin (2021) [23] refers to creativity when writing about innovative mindset. Finally, the term bureaucracy shows

**Table 1.** Articles on Innovation Mindset 2019 – 2021 (author)

| AUTHORS / TITLE | JOURNAL | Pseudo impossibilities | Mental Flexibility | Self-regulation | inference | Figure-ground | Productive thinking | OTHERS |
|---|---|---|---|---|---|---|---|---|
| Engelsberger, A., Halvorsen, B., Cavanagh, J., & Bartram, T. (2021) [25]. Human resources management and open innovation: the role of open innovation mindset | *Asia Pacific Journal of Human Resources* | NO | NO | NO | NO | NO | NO | |
| Eason, C. C., & Mazzei, M. J. (2019) [21]. Teaching and Doing Strategy as an Intentional Strategic Innovation Mindset | *Journal of Strategic Innovation and Sustainability* | NO | Curious flexibility | NO | NO | NO | NO | Cognitive biases |
| Harsono, A. A., & Fitri, S. (2020) [22]. Innovation mindset: SMES vs startups | *International Journal of Business and Economy* | NO | NO | NO | NO | NO | NO | Resilience |
| Fitri, S., & Pertiwi, (2019) [26]. A. Innovation mindset model at the early stage startup with Berkeley innovation index approached | *Technology Management* | NO | NO | NO | NO | NO | NO | |
| Muhamad, M. S. (2019) [24]. Open management and role in developing the innovation mindset of managers. | *AL-MANSOUR JOURNAL* | NO | NO | NO | NO | NO | NO | ARAB bureaucracy |
| McLaughlin, L. A., & McLaughlin, J. (2021) [23]. Framing the Innovation Mindset. | *Issues in Informing Science and Information Technology* | NO | YES | NO | NO | NO | YES | Creativity |
| ARTICLES WITH THE EXPRESSION INNOVATION MINDSET IN THE CONTEXT | | | | | | | | |
| Sahasranamam, S. (2020, May) [27]. How coronavirus sparked a wave of innovation in India | *World Economic Forum.* | NO | NO | NO | NO | NO | NO | |
| Nunes, A. C. B., & Canavilhas, J. (2020) [28]. Journalism innovation and its influences in the future of news: a European perspective around Google DNI Fund initiatives | *Journalistic Metamorphosis* | NO | NO | NO | NO | NO | NO | |
| Muftahu, M., & Jamil, H. (2021) [29]. Sustainable knowledge flow and innovation in higher education: the implementation of change management in universities | *International Journal of Innovation and Sustainable Development* | NO | NO | NO | NO | NO | NO | |
| Urze, P., Rosas, J., Tenera, A., & Camarinha-Matos, L. M. (2019) [30], September). Open Innovation Practitioners Mindset on Risk | *Working Conference on Virtual Enterprises* | NO | YES (*) | NO | NO | NO | YES (*) | |

up in the article of Muhamad (2019) [24]. Although written in Arab, with no translation into English, the term appears in its abstract.

In sum, the articles, here analyzed, apply the innovation mindset definition to different situations, taking for granted the psychological mechanisms inlayed in it, although some of them mentioned theoretical issues not previously considered in the present framework.

## 6. Conclusions

As a theoretical study, it only touches the surface of the problem. It indicates the urgent need of interdisciplinary studies, due to the mutual benefits for both sciences – Management and Psychology - and for a better comprehension of the constructs.

The articles were most published in Management related Journal; none in Psychological ones. The search confirmed the trend to take for granted the innovation mindset definition itself and or the psychological processes to attain it, and focus on adoption of the innovation mindset, for example, or on the need of it in different innovative environments and situations.

Theoretically speaking, innovation mindset is, in short, a special kind of mindset, a peculiar way of thinking about problems, a particular look at uncertainties, besides the competence to deal with them, as say Salerno & de Vasconcelos Gomes (2018) [17]. It requires: a) overcoming pseudo impossibilities and pseudo necessities (thing is what it is? cannot change?); b) flexibility for segregating figure – ground (see figure and context in different contexts); c) resisting the first idea that comes to mind; d) avoid conclusions and inferences based on consecutive events; e) self-regulation.

The rooted habits, which fix the mind in known mental paths, create an inner environment not favorable to creativity and innovation. Dealing with this is a permanent challenge to those individuals who want to develop innovative projects. A free and creative spirit is the foundation of innovative behavior. Beyond new ventures and startups, creativity and innovation is the basis of an autonomous subject.

The present study presents several limitations, among which the quest of rational versus irrational choices, an important issue that has been studied by Behavioral Economy. As say Tomasello & Call (1997) [18], "Most social sciences currently have a significant contingent of researchers whose research is based on a rational choice model. That is, they assume that people appraise their options and choose on the basis of what will further their self-interest in the long or short term". Same authors conclude: "Rational analysis is a distinctively human

process. As far as research has shown, no other animals engage in rational analysis, which presupposes free will". Future studies could investigate this important issue.

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## ARTICLE

# Strokes of Strength: An Expressive Arts-based Intervention with Adolescents

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| ARTICLE INFO | ABSTRACT |
|---|---|

In order to explore how adolescents who have been affected by traumatic experiences would respond to an expressive arts-based intervention, a module was designed, implemented and its effect on certain behavioral and emotional constructs was evaluated. The sample included 10 female adolescents between the ages of 12 and 17 who underwent a 2-month long group expressive arts therapy in their institutional home, namely, Prayas Juveline Aid Centre, New Delhi, India. The tools which were used to assess the changes in the pre – post intervention scores in self – reported behavioral and emotional difficulties were: The Youth Self Report Form (YSR Form 11-18, CBCL; ASEBA, 2001) and the 'Severity of Post – Traumatic Stress Scale' (NSESSS; APA, 2013). The tools used to assess the changes in the pre – post intervention ratings of the caregiver were, the 'DSM – 5 Parent / Guardian Rated Level 1 Cross Cutting Symptom Measure' (APA, 2013) and the 'Caregiver's Observation Checklist: Children at – risk' (WCCL, 2013). The results revealed that 4-week expressive arts -based intervention elicited a statistically significant difference in the self – reported behavioural and emotional difficulties by the participants. The verbatim reports, diary excerpts and paintings of the participants were qualitatively analysed. In future, there is room to investigate how an intervention with a longer duration and a representative sample would explain the effectiveness of expressive – arts-based therapy with such populations.

## 1. Introduction

An alarming number of children are under institutional care in India, however a concrete and accurate figure representation of the same is not available [1]. Studies have indicated that institutionalised upbringing brings with it emotional problems like insecure attachment styles, lack of sympathy, poor sense of self, aggressiveness, non – compliance, internalising problems (anxiety, depression), externalising problems (aggression, impulsivity) and other behavioural problems [2].

The lack of a caregiver especially during the develop-

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mental years may lead to role confusion, identity crisis and problems with attachment for these students as a nurturing connection between a caregiver facilitates and ensures the psychological and emotional well-being of individuals [3]. The absence of that condition, calls for urgent interventions which would ensure an environment which provides the same. By introducing creative therapies into this realm, one is tapping into the cognitive, emotional, mental and social development of these students. The effect of art therapy with sexually abused children and adolescents was assessed and it was noted that there was a statistically significant reduction in symptomatology scores on nine of the ten clinical subscales [4].

"Expressive therapy has been defined as the use of drama, painting, music and literature for psychotherapeutic purposes which include improving and enhancing the physical, emotional and cognitive functions of individuals, resolution of conflicts and stress reduction" [5]. The sessions can be structured in a way that allows the client to move carefully and safely towards challenging core issues [6]. This lays the foundation for increased self – awareness, communication and emotional literacy.

## Expressive Arts Therapy with Trauma

The theoretical evidence for art therapy with children and youth suggests that as an intervention it is a constructive way to manage emotional and physical disturbances through the promotion of self-discovery and healing. A review of art therapy done with traumatized children noted that there were qualitative changes, along with evidence in effectiveness for emotion regulation and expression, reduction in PTSD symptom scores, reduction in anxiety and disassociation and increase in the understanding of traumatic events [7].

As has been proven by literature, trauma – focused expressive arts therapy elicits positive behavioural and emotional changes in the lives of adolescents. Traumatised youth have difficulty recognising safety and danger because of trauma exposure [8]. Would trauma – focused art therapy help female adolescents explore their fundamental experiences associated with safety and threat? Would it create opportunities for different ways of orienting to safe and dangerous situations using non – verbal representations? The non – verbal representations that would be used in the present research are different forms of art, theatre and movement. These imaginal representations would be used as the basis for verbalising the associated experiences in a supportive social context.

The arts have been proven to help promote social inclusion among struggling and marginalized communities. Recognizing that the arts have power, even to fulfil primary needs, makes expressive arts therapy much more important than something that is occasionally used by therapists when dealing with trauma. Would the inclusion of arts, considered by many only a means of entertainment, bring fundamental changes in the behavioural and emotional difficulties faced by the students?

As emphasised with the help of studies, the delicate emotional, social and cognitive conditions these adolescents are exposed to calls for interventions in these areas. A comfortable, non – threatening, safe environment which promotes fostering of relationships and expression of the trauma and delicate areas these children have been exposed to, is a major part of the therapeutic process aiding the students to develop strong mechanisms and basis for their development and growth later.

The current research caters to children 'in need of care and protection' (CNCP) which can be understood as encompassing children below 18 years of age found to be begging, homeless, living on the street, runaway children, with a history of exploitation, special needs, subject to maltreatment and inadequate maternal and familial care. The inappropriate family conditions of these students are why the Child Welfare Committee along with HAQ, Centre for Child Rights has taken a decision to provide institutional care to these children.

The family background and traumas faced by the students in these institutions are not adequately represented only by looking at their verbatim reports, FIR's, medical examinations and hearing to what their family wants to say. In a lot of situations where they are required to share their experiences which compelled them to run away from home, for example, the clear picture might not be put forward. Already dealing with issues of trust and empathy, these students do not easily share their experiences with reporters or social workers. It is only after addressing their mental health needs and providing a safe and comfortable environment where expression is promoted that they would be able to share a clear picture of their problems. Among the several problems the country is facing, this should not be pushed under the carpet taking into consideration the negative consequences it holds for the children cognitively and mentally. Their mental health condition should not be neglected keeping in mind that their psychological well-being affects every aspect of their lives, from their ability to learn, be healthy, play, be productive and relate to other people as they grow [9]. In this context, this research is an attempt to provide a systematic and researched intervention to acknowledge the mental health problems and give a space to these adolescents by addressing psychological problems,

socialization skills, engaging them in extracurricular activities and improving their coping strategies.

## 2. Materials and Methods

The aim of the current research was to test the effectiveness of an expressive arts-based intervention with adolescents who have survived trauma.

The research aimed to answer the following questions:

Does an expressive arts intervention bring behavioural and emotional changes in adolescents who are 'in need for care and protection'?

How do adolescents 'in need of care and protection' in institutional homes respond to expressive arts therapy?

The hypotheses of the study were:

There will be significant difference in the self – reported checklist of behavioural and emotional difficulties by the participants, after the pre-post expressive arts – based intervention.

There will be significant difference in the behavioural difficulties of the participants, after the pre – post expressive arts-based intervention, reported by the caregiver.

### 2.1 Participants

The participants of the current study were 10 female adolescents in need of care and protection who underwent group expressive arts therapy in their institutional home, namely, Prayas Juveline Aid Centre, New Delhi, India. The participants were selected through convenience sampling, as only 10 students were available during 4-6 pm, they were involved in the study after taking permission from the head of the institution and their care giver. Since it was an institutional home for females only, the sample of the present study consists of females only.

As was mutually agreed upon between the researcher and the head of the institution, all personal information about the participants was kept confidential. As the participants are in conflict with the law, it was insured that their name, family background and information about the convicts in each case would not be disclosed. The information disclosed in the research was not used for any legal or administrative reasons.

The range of the participants age was between 12-17; the mean age was 14.2 and the average number of months all the participants had spent in the institution was 13.1. Information about the nature of abuse was not disclosed by the institution, however through the activities it was revealed that all had been victims of sexual, verbal, or physical abuse. The same students attended all the sessions and 4 students missed one session each out of the 12 sessions due to personal reasons. The institution which

the sample belongs to, is a non-governmental organisation with its base in New Delhi, India. It describes itself as a humanitarian, gender-sensitive and child-focused development organization with a vision to restore the lost childhood of children in need of care, protection and development.

**Table 1.** Demographic Details of Participants

| Age | Number of months spent in Prayas | Educational Background |
|---|---|---|
| 12 | 18 | No schooling |
| 13 | 18 | Grade 2 |
| 17 | 16 | Vocational Training in institution |
| 16 | 15 | Vocational Training in Institution |
| 12 | 12 | Grade 3 |
| 13 | 12 | Grade 4 |
| 14 | 8 | Grade 6 |
| 17 | 7 | Vocational Training in Institution |
| 14 | 12 | Grade 6 |
| 14 | 13 | Grade 6 |

### 2.2 Assessments and Measures

**Severity Of Posttraumatic Stress Symptoms** – Child Age 11-17 National Stressful Events Survey PTSD Short Scale (NSESSS; APA, 2013)

A 9-item measure that assesses the severity of posttraumatic stress disorder in children ages 11–17 following an extremely stressful event or experience. It was administered before and after the intervention to track the changes in the reported problems experienced by the students.

**The DSM – 5 Parent/Guardian- Rated Level 1 Cross Cutting Symptom Measure-**Child Age 6-17 (APA, 2013)

It was administered for each child by the same caretaker once before and once after the intervention to track changes over time with regards to the symptoms that can be observed differently for the intervention group.

**Caregiver's Observation Checklist: Children at-risk** (WCCL, 2013)

This checklist was developed as a part of the Arts Based Therapy (ABT) Project by the World Centre For Creative Learning Foundation, Pune. Permission to use the checklist was granted by Mr. Zubin Balsara from the WCCL Foundation, who also graciously agreed to share the checklist. The caregiver of the institution who lived with all the children was able to clearly point out the behaviours and subsequent difference in behaviours that hold true for each child.

**The Child Behaviour Checklist: Youth Self Report Form 11-18** (CBCL; ASEBA, 2001)

The module used for the present research was the youth – self report form of the child behaviour checklist which

was filled by the participants themselves. The Hindi translation of the YSR/11-18 was provided by the licensor, ASEBA (Research Center for Children, Youth & Families Inc.), countersigned by Dr. Thomas M. Achenbach, President of the Research Center for Children, Youth & Families, Inc (License #1641 -02-08-18).

## 2.3 Procedure

After an institution with a sample similar to the target population was finalised, permission was taken from the head of the institution and the care giver after explaining the procedure and activities of the intervention in detail. The researcher is a UNESCO – certified Expressive Arts Based Therapist having successfully completed the course titled "Expressive Arts Therapy in Clinical Practice" with 150 hours of expressive movement therapy and over 100 hours of practice, having worked with NGO's and corporates using expressive arts. The researcher was also a member of the International Dance Council CID under Registration Number 19717.

The group consisted of 10 female adolescents with a mean age of 14.2 years. The group met for more than 2 months, from January 26, 2018 to March 30, 2018. The two weeks from January 25, 2018 – February 10, 2018 were utilised for rapport formation and pre – intervention scoring by both the students and the care giver. In the period from February 12, 2018 – March 6, 2018, 12 sessions were held in the institution, every Monday, Wednesday and Friday from 4 – 5:30/6 pm. As mentioned in their paper titled 'Best Practices in ABT', the WCCL Foundation (2013), after an analysis of some studies done previously in the field, 1.5 hours emerged as the optimum time for each session. Each session started with deep breathing, chanting om in a circle and 'Surya namaskars' for 7-8 minutes. After this, a warm – up exercise was facilitated in each session which lasted from about 4:10 – 4:20, which focused on utilising various parts of the body in different ways and involved voice and music. From 4:20 – 5:20 the main goal of each session was tackled, by introducing activities which catered to the goal. For example, in the session which focused on movement and vulnerabilities, Gabrielle Roth's 5 rhythms exercise was facilitated and, in a session, focusing on group cohesiveness, trust falls and group performance activities were facilitated. After focusing on the goal of every session, 10 minutes towards the end were used for closure where the students were encouraged to share their feelings and thoughts, followed by 'surya namaskars' and deep breathing. Each participant was given a personal diary on the first session itself where they could pen down their

thoughts and draw whatever came to their mind during the course of the sessions.

The period from March 12, 2018 – March 17, 2018 was used for providing closure to the students and they were given opportunities to facilitate, lead and design some activities themselves for the entire group. Following this, in the last phase of the study, post- intervention scoring was carried out with the care giver and the students from March 19, 2018 to March 30, 2018, where they were required to answer all the tools they had answered before the intervention.

The data were analysed and the paintings and diaries of the students were understood keeping in mind literature and the discussions they had with the researcher during which similar themes came up.

## 3. Results and Discussion

To assess the effectiveness of the expressive arts-based intervention, it was hypothesized that there would be a significant difference in the self – reported checklist of behavioural and emotional difficulties, as responded to by the participants, after the pre-post expressive arts – based intervention. The results were statistically analysed using the Wilcoxon signed ranks test. The verbatim reports, diary excerpts and paintings of the participants were qualitatively analysed. The Wilcoxon signed – rank test showed that a 4- week expressive arts-based intervention elicited a statistically significant difference in 10 out of the 11 behavioural constructs (Table 2). A statistically significant difference was also noted for the post – intervention self – reported traumatic symptoms (Table 4). Thus, the hypothesis stating that there will be a significant difference in the self-reported behavioural and emotional difficulties after the intervention by the participants, has been accepted.

**Quantitative analysis using the Wilcoxon signed rank test was based on the analysis of the following tools:**

• The Youth Self Report Form (YSR Form 11-18) of the Child Behavior Checklist (CBCL; ASEBA, 2001)- Table 2

• DSM – 5 Parent / Guardian Rated Level 1 Cross Cutting Symptom Measure Measure-Child Age 6-17 (APA, 2013) –Table 3

• Severity of Post – Traumatic Stress Scale - Child Age 11-17 National Stressful Events Survey PTSD Short Scale (NSESSS; APA, 2013)-Table 4

• Caregiver's Observation Checklist: Children at – risk' (WCCL, 2013) – Graph 1

The analysis of each construct in each tool has been attached in the Appendix (Appendix A)

**Table 2.** Post Intervention scores – Youth Self Report Form

| Name of the Tool | Overall Analysis | Constructs with significant difference post intervention | Constructs with no significant difference post intervention |
|---|---|---|---|
| Youth Self Report Form of the Child Behavior Checklist | Statistically significant post intervention scores (p <.01 ;10 out of 11 constructs) | Depressive Problems. (Z = 2.66, p < .01) Anxiety Problems. (Z = 2.81, p < .01) Somatic Problems. (Z = 2.38, p < .05) Attention deficit / Hyperactivity problems. (Z = 2.68, p < .01) Oppositional defiant problems. (Z = 2.04, p < .05) Internalising problems. (Z = 2.7, p< .01) Externalising problems. (Z = 2.4, p < .05) Social problems. (Z = 2.8, p < .01). Thought problems (Z = 2.81, p < .01) Attention problems. (Z = 2.69, p < .01) | Conduct problems Z = 1.866 Asymp. Sig. (2-tailed) = .062 There was no significant difference in the pre and post scores for conduct problems. |

**Table 3.** Post Intervention Scores on the Cross Cutting Symptom Measure.

| Name of the Tool | Overall Analysis | Statistical difference post intervention | No statistical difference post intervention |
|---|---|---|---|
| Cross-Cutting Symptom Measure | Statistically significant difference post intervention scores (2 out of the 9 constructs) | Sleep problems (Z = 2, p < .05). Depression (Z = 2.24, p < .05) | Somatic symptoms Inattention Anger and irritability Mania Anxiety Psychosis Repetitive thoughts and behaviours |

**Table 4.** Post Intervention Scores on the Severity of Posttraumatic Stress Symptoms Scale.

| Name of the Tool | Overall Analysis | Statistical difference post intervention | No statistical difference post intervention |
|---|---|---|---|
| Severity of Posttraumatic Stress Symptoms Scale | Improvement in self – reported scores of all female participants, p<.01**. | All the participants of the study showed an improvement in their self – reported scores, indicating a statistically significant difference in the post – intervention scores. | N. A |
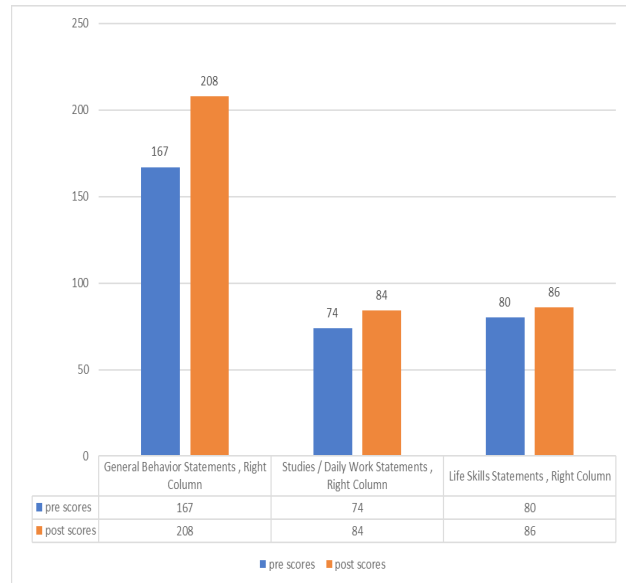


**Graph 1.** Caregiver's Observation

Checklist: Results Pre and Post Intervention

Graph 1 depicts the difference in the observational ratings checked by the care giver of the institution before and after the intervention.

The right column represented the more functional and adaptive behavioural alternatives to the ones in the left column. As can be noted, the care giver observed that the scores in all the domains had increased in general behaviour, daily work and life skills after the intervention with an increase of 41, 10 and 6 points respectively.

The statistically significant difference can be attributed to the fact that earlier emotions which were intensified as somatic or avoidant symptoms were now being expressed through some medium [10]. The movement exercises involved exaggeration and humour of certain body parts along with imitation which was used by movement therapists like Trudi Schoop for body image issues [11]. The exercises in the warm up session generally focused on swinging motions which provided a sense of freedom and security to the students [12].

**Progressive changes in art work**

The usage of art and its various mediums brought about a significant change in the scores of constructs like depressive, anxiety, somatic, attention, oppositional defiant, internalising, externalising, social and thought problems. The activities aimed to teach the participants coping skills for loss and building resilience [13].

The images which have been attached in the appendix, highlight the images made by the participants of the present study, indicating the presence of abuse along with

the positive changes through some representations in their artwork. Malchiodi [14] recorded recurring features which she observed in the art images of abused children, some of which have also appeared in the current research., which are:

- Sexual connotations in the art work
- Disorganization and distortion of body parts
- Encapsulation
- The use of the colour red
- Heart shapes.
- Artistic regression

The use of projective techniques was intentionally used as re- traumatization and an over load of the nervous system had to be avoided [15]. The mindfulness training provided them skills through which they could increase their tolerance of distress associated with negative experiences to reduce avoidance [16].

There was also a statistically significant difference in the self – reported measure of Severity of Post-traumatic Stress Symptoms. Trauma -focused art therapy intervention has been known to reduce trauma symptoms after post treatment [17] which might also explain a significant difference in the reduction of the self-reported scores on the severity of posttraumatic stress scale.

The difference in the pre and post observational ratings of the care giver on general behaviour, daily work and life skills (Graph 1), were also looked at. A Wilcoxon signed – rank test showed a statistically significant difference in 2 constructs i.e., sleep problems and depression, as reported by the caregiver (Table 2). Hence, the hypothesis that there would be a significant difference in the behavioural difficulties of the participants, after the pre – post expressive arts based intervention, reported by the caregiver, has been partially accepted.

## 4. Conclusions

The present research was an attempt by the researcher to test the effectiveness of an expressive arts-based intervention with a specific gender, age and target population. A potential limitation to the external validity and generalisability of the current research is the fact that it has a restricted sample of females belonging to a certain socio – economic strata with similar traumatic experiences.

In the future, there is room to implement and assess an intervention on these lines albeit with a larger sample size, different age groups, genders, classes, races and ethnicities, which would enhance the research done in the field, especially in the Indian context. The problems of child abuse and the traumatic conditions which come with certain social prevailing conditions in the Indian context make it necessary for interventions of this scope to reach out to more people, across all ages. More importantly, it is important to accept and introduce non – conventional forms of psychotherapy as openly as psychotherapy and counselling. In a country where the stigma related to counselling and mental health is already very intense, accepting a non – conventional form of the same will most definitely be a challenge, but a necessary step.

The intervention took place with imperfections in time and design, sans a control group, yet it produced a positive outcome. The results indicate that even though time and a small sample would reduce the generalisability, if an intervention on these lines is introduced into the community level, the ripple effect it will have on innumerable domains is unquestionable. An intervention is not a cure for the survivors of such wide expanse of trauma, it is a sincere attempt to minimise the extent to which the experience still interferes with their entire existence.

## Author Contributions

Each credited author has had a significant contribution to the article.

## Conflict of Interest

Nil.

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## Appendix A

Tables 1A – 1K reflect the differences in post - intervention and pre – intervention ranks for the youth self-report form of the child behaviour checklist.

**Table 1A.** Difference in the post – intervention and pre – intervention scores for depressive problems.

| | Ranks | N | Mean Rank | Sum of Ranks | Test Statistics |
|---|---|---|---|---|---|
| Post Pre | Negative Ranks | 9a | 5.00 | 45.00 | Z = -2.670 |
| | Positive Ranks | 0b | .00 | .00 | Asymp. Sig. |
| | Ties | 1c | | | (2-tailed) |
| | Total | 10 | | | =.008** |

9 out of 10 students showed improvement indicating that post – intervention ranks were statistically significantly higher than pre – intervention ranks. (Z = 2.66, p < .01).

**Table 1B.** Difference in the post – intervention and pre – intervention scores for anxiety problems.

| | Ranks | N | Mean Rank | Sum Of Ranks | Test Statistics |
|---|---|---|---|---|---|
| Post Pre | Negative Ranks | 10a | 5.50 | 55.00 | Z = - 2.812 |
| | Positive Ranks | 0b | .00 | .00 | Asymp. |
| | Ties | 0c | | | Sig. (2 |
| | Total | 10 | | | tailed) |
| | | | | | =.005** |

All 10 students reported an improvement in scores on anxiety indicating that post – intervention ranks were statistically significantly higher than pre – intervention ranks (Z = 2.81, p < .01).

**Table 1C.** Difference in the post – intervention and pre – intervention scores for somatic problems.

| | Ranks | N | Mean Rank | Sum Of Ranks | Test Statistics |
|---|---|---|---|---|---|
| Post | Negative Ranks | 7a | 4.00 | 28.00 | Z =2.388 |
| Pre | Positive Ranks | 0b | .00 | .00 | Asymp. |
| | Ties | 2c | | | Sig. (2 |
| | Total | 9 | | | tailed) |
| | | | | | =. 017* |

The scores for 7 students increased post intervention and remained the same for 2, indicating that post – intervention ranks were statistically significantly higher than pre – intervention ranks (Z = 2.38 , p < .05).

**Table 1D.** Difference in the post – intervention and pre – intervention scores for attention deficit / hyperactivity problems.

| | Ranks | N | Mean Rank | Sum Of Ranks | Test Statistics |
|---|---|---|---|---|---|
| Post | Negative Ranks | 9a | 5.00 | 45.00 | Z = 2.684 |
| Pre | Positive Ranks | 0b | .00 | .00 | Asymp. |
| | Ties | 1c | | | Sig. |
| | Total | 10 | | | (2-tailed) |
| | | | | | =.007** |

9 out of 10 children showed an improvement in their scores for attention deficit / hyperactivity problems indicating that post – intervention ranks were statistically significantly higher than pre – intervention ranks. (Z = 2.68 , p < .01)

**Table 1E.** Difference in the post – intervention and pre – intervention scores for oppositional defiant problems.

| | Ranks | N | Mean Rank | Sum Of Ranks | Test Statistics |
|---|---|---|---|---|---|
| Post | Negative Ranks | 8a | 5.94 | 47.50 | Z = - 2.048 |
| Pre | Positive Ranks | 2b | 3.75 | 7.50 | Asymp. |
| | Ties | 0c | | | Sig. |
| | Total | 10 | | | (2-tailed) |
| | | | | | =.041* |

The scores on the construct measuring oppositional defiant disorders improved for 8 students and increased for 2 students, showing significance at the 0.5 level (Z = 2.04 , p < .05).

**Table 1F.** Difference in the post – intervention and pre – intervention scores for conduct problems

| | Ranks | N | Mean Rank | Sum Of Ranks | Test Statistics |
|---|---|---|---|---|---|
| Post | Negative Ranks | 5a | 5.00 | 25.00 | Z = 1.866 |
| Pre | Positive Ranks | 2b | 1.50 | 3.00 | Asymp. |
| | Ties | 3c | | | Sig. |
| | Total | 10 | | | (2-tailed) |
| | | | | | = .062 |

There was no significant difference in the pre and post scores for conduct problems with 5 participants showing

improvement, 3 reporting the same score, and 2 reporting an increase in scores.

**Table 1G.** Difference in the post – intervention and pre – intervention scores for internalising problems.

| | Ranks | N | Mean Ranks | Sum Of Ranks | Test Statistics |
|---|---|---|---|---|---|
| Post | Negative Ranks | 9a | 6.00 | 54.00 | Z = -2.703 |
| Pre | Positive Ranks | 1b | 1.00 | 1.00 | Asymp. |
| | Ties | 0c | | | Sig. (2 |
| | Total | 1o | | | tailed) |
| | | | | | = .007** |

A statistically significant difference was seen for internalising problems wherein 9 children showed improvement and the scores for 1 increased after the intervention. (Z = 2.7, p< .01).

**Table 1H.** Difference in the post – intervention and pre – intervention scores for externalising problems

| | Ranks | N | Mean Ranks | Sum of Ranks | Test Statistics |
|---|---|---|---|---|---|
| Post | Negative Ranks | 9a | 5.67 | 51.00 | Z = -2.402 |
| Pre | Positive Ranks | 1b | 4.00 | 4.00 | Asymp. |
| | Ties | 0c | | | Sig. |
| | Total | 10 | | | (2-tailed) |
| | | | | | = .016* |

A statistically significant difference was noted for externalising problems with 9 students showing improvement post intervention (Z = 2.4, p < .05).

**Table 1I.** Difference in the post – intervention and pre – intervention scores for social problems

| | Ranks | N | Mean Rank | Sum Of Ranks | Test Statistics |
|---|---|---|---|---|---|
| Post | Negative Ranks | 10a | 5.50 | 55.00 | Z = -2.805 |
| Pre | Positive Ranks | 0b | .00 | .00 | Asymp. |
| | Ties | 0c | | | Sig. |
| | Total | 10 | | | (2-tailed) |
| | | | | | = .005** |

The scores on social problems reduced significantly as well with all students showing improvement post intervention (Z = 2.8, p < .01).

**Table 1J.** Difference in the post – intervention and pre – intervention scores for thought problems

| | Ranks | N | Mean Rank | Sum Of Ranks | Test Statistics |
|---|---|---|---|---|---|
| Post | Negative Ranks | 10a | 5.50 | 55.00 | Z = -2.814 |
| Pre | Positive Ranks | 0b | .00 | .00 | Asymp. Sig. |
| | Ties | 0c | | | (2-tailed) |
| | Total | 10 | | | = .005** |

Scores on thought problems also reduced with statistical significance with all 10 students showing a reduction in their scores post the intervention(Z = 2.81 , p < .01).

**Table 1K.** Difference in the post – intervention and pre – intervention scores for attention problems.

| | Ranks | N | Mean Rank | Sum Of Rank | Test Statistics |
|---|---|---|---|---|---|
| Post | Negative Ranks | 9a | 5.00 | 45.00 | Z =-2.692 |
| Pre | Positive Ranks | 0b | .00 | .00 | Asymp. |
| | Ties | 1c | | | Sig. |
| | Total | 10 | | | (2-tailed) =.007** |

Scores on the domain of attention problems reduced significantly for 9 students and remained the same for 1 student indicating a statistically significant difference. (Z = 2.69, p < .01).

Note. a = post- intervention scores < pre – intervention scores        * = p <. 05

b = post – intervention scores > pre – intervention scores        **= p < .01

c = post – intervention scores = pre – intervention scores

Graph 1 depicts the means of the scores of the students in the DSM 5 based and empirically- based syndrome scales measured by the child behaviour checklist. As can be seen, across all dimensions the scores in the post intervention phase have decreased.

**Table 2A.** the difference in the ranks of the self – reported scores on the 'severity of posttraumatic symptoms' post the expressive – arts based intervention.

| | RANKS | N | Mean Rank | Sum Of Ranks | Test Statistics |
|---|---|---|---|---|---|
| Post | Negative Ranks | 10a | 5.50 | 55.00 | Z=-2.807 |
| Pre | Positive Ranks | 0b | .00 | .00 | Asymp. |
| | Ties | 0c | | | Sig. |
| | Total | 10 | | | (2-tailed) =.005** |

All the participants of the study showed an improvement in their self – reported scores, indicating a statistically significant difference in the post – intervention scores (Z = 2.8, p > .01)

Note. a = post- intervention scores < pre – intervention scores        * = p <. 05

b = post – intervention scores > pre – intervention scores        **= p < .01

c = post – intervention scores = pre – intervention scores
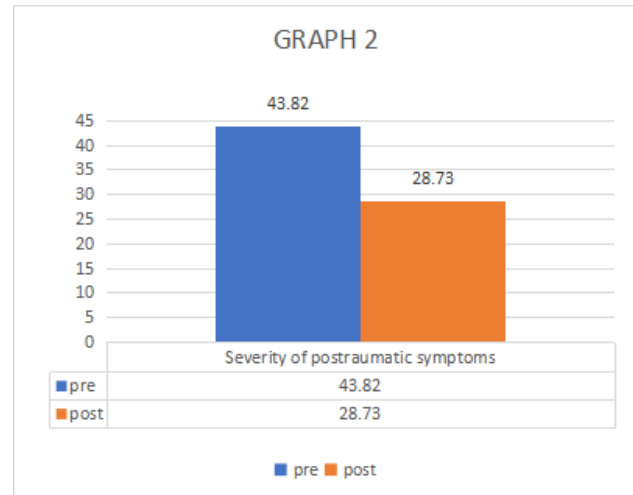


**Graph 2** depicts the decrease in the self – reported severity of posttraumatic symptoms after the intervention. As can be interpreted from the graph, the means decreased from 43.82 in the pre – intervention phase to 28.73 in the post – intervention phase.

Tables 3A – 3I reflect the scores on the cross-cutting symptom measure answered by the care giver of the institution.

**Table 3A.** Difference in the scores of somatic symptoms post – intervention as reported by the caregiver.

| | Ranks | N | Mean Rank | Sum Of Ranks | Test Statistics |
|---|---|---|---|---|---|
| Post | Negative Ranks | 0a | .00 | 00 | Z=.000 |
| Pre | Positive Ranks | 0b | .00 | .00 | Asymp. |
| | Ties | 10c | | | Sig. |
| | Total | 10 | | | (2-tailed) =1.000 |

The scores for all 10 students remained exactly the same indicating no statistically significant difference.

4 participants showed improvement, and the scores for 6 students remained the same, indicating a statistically significant difference in the scores. (Z = 2, p < .05).

**Table 3B.** Difference in the scores of sleep problems post – intervention as reported by the caregiver

| | Ranks | N | Mean Rank | Sum Of Ranks | Test Statistics |
|---|---|---|---|---|---|
| Post | Negative Ranks | 4a | 2.50 | 10.00 | Z = -2.000 |
| Pre | Positive Ranks | 0b | .00 | .00 | Asymp. |
| | Ties | 6c | | | Sig. (2 |
| | Total | 10 | | | tailed) = 0.46* |

**Table 3C.** Difference in the scores of inattention post – intervention as reported by the caregiver

| | Ranks | N | Mean Rank | Sum Of Ranks | Test Statistics |
|---|---|---|---|---|---|
| Post | Negative Ranks | 2a | 1.50 | 3.00 | Z = -1.414 |
| Pre | Positive Ranks | 0b | .00 | .00 | Asymp. |
| | Ties | 8c | | | Sig. |
| | Total | 10 | | | (2-tailed) = .157 |

2 students showed improvement however the scores for 8 students remained the same, showing no statistical difference in inattention as reported by the care giver.

**Table 3D.** Difference in the scores of depression post – intervention as reported by the caregiver

| | Ranks | N | Mean Rank | Sum Of Ranks | Test Statistics |
|---|---|---|---|---|---|
| Post | Negative Ranks | 5a | 3.00 | 15.00 | Z = -2.236 |
| Pre | Positive Ranks | 0b | .00 | .00 | Asymp. |
| | Ties | 5c | | | Sig. |
| | Total | 10 | | | (2-tailed) =.025* |

5 participants showed improvement while the scores for 5 participants remained the same, indicating a statistically significant difference in the post – intervention scores for depression (Z = 2.24, p < .05).

**Table 3E.** Difference in the scores of anger and irritability post – intervention as reported by the caregiver.

| | Ranks | N | Mean Rank | Sum Of Ranks | Test Statistics |
|---|---|---|---|---|---|
| Post | Negative Ranks | 5a | 3.50 | 17.50 | Z = -1.633 |
| Pre | Positive Ranks | 1b | 3.50 | 3.50 | Asymp. |
| | Ties | 4c | | | Sig. |
| | Total | 10 | | | ( 2 - tailed) =.102 |

5 students showed improvement, while the scores for 2 increased and remained the same for 1, indicating that the results were not statistically significant.

**Table 3F.** Difference in the scores of mania post – intervention as reported by the caregiver

| | Ranks | N | Mean Rank | Sum Of Ranks | Test Statistics |
|---|---|---|---|---|---|
| Post | Negative Ranks | 0a | .00 | 00 | Z =.000 |
| Pre | Positive Ranks | 0b | .00 | .00 | Asymp. |
| | Ties | 10c | | | Sig. |
| | Total | 10 | | | (2-tailed) = 1.000 |

The scores for the participants remained exactly the same post intervention, indicating no statistically significant difference in the scores post – intervention.

**Table 3G.** Difference in the scores of anxiety post – intervention as reported by the caregiver

| | Ranks | N | Mean Rank | Sum Of Ranks | Test Statistics |
|---|---|---|---|---|---|
| Post | Negative Ranks | 3a | c | 6.00 | Z = -1.732 |
| Pre | Positive Ranks | 0b | .00 | .00 | Asymp. Sig. |
| | Ties | 7c | | | (2-tailed) |
| | Total | 10 | | | = .083 |

The results did not indicate a statistically significant difference with the reduction in scores of only 3 participants.

**Table 3H.** Difference in the scores of psychosis post – intervention as reported by the caregiver

| | Ranks | N | Mean Rank | Sum Of Ranks | Test Statistics |
|---|---|---|---|---|---|
| Post | Negative Ranks | 0a | 00 | 00 | Z = .000 |
| Pre | Positive Ranks | 0b | .00 | .00 | Asymp. |
| | Ties | 10c | | | Sig. |
| | Total | 10 | | | (2-tailed) =1.000 |

The results did not indicate a statistically significant difference as the scores for the participants remained the same post intervention.

**Table 3I.** Difference in the scores of repetitive thoughts and behaviours post – intervention as reported by the caregiver

| | Ranks | N | Mean Rank | Sum Of Ranks | Test Statistics |
|---|---|---|---|---|---|
| | Negative Ranks | 0a | | | Z = .000 |
| Post | Positive Ranks | 0b | .00 | .00 | Asymp. Sig. |
| Pre | Ties | 10c | .00 | .00 | (2-tailed) = 1.000 |
| | Total | 10 | | | |

The results did not indicate a statistically significant difference as the scores for the participants remained the same post intervention.

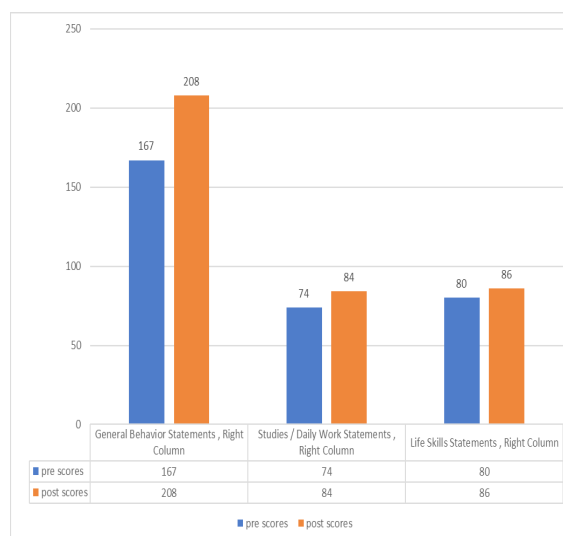Note. a = post- intervention scores < pre – intervention scores        * = p <. 05

b = post – intervention scores > pre – intervention scores        **= p < .01

c = post – intervention scores = pre – intervention scores

Graph 3 depicts the difference in the mean pre – intervention scores and post – intervention scores as reported by the care giver. As can be interpreted, the means for 4 dimensions have remained exactly the same.

## GRAPH 4

Graph 4 depicts the difference in the observational ratings checked by the care giver of the institution before and after the intervention. The right column represented the more functional and adaptive behavioural alternatives to the ones in the left column. As can be noted, the care giver observed that the scores in all the domains had increased in general behaviour, daily work and life skills after the intervention with increase of 41 , 10 and 6 points respectively.



| | General Behavior Statements , Right Column | Studies / Daily Work Statements , Right Column | Life Skills Statements , Right Column |
|---|---|---|---|
| pre scores | 167 | 74 | 80 |
| post scores | 208 | 84 | 86 |

ARTICLE

# Survey on the Evasion Factors of a Psychology School Clinic

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ABSTRACT

The Psychology School Clinic enables the practice of internships in which students apply their theoretical knowledge in procedures made available free of charge by the university to the community. Through the characterization of the reasons for evasion of cases dismissed in 2019, it is proposed to identify the causes of the psychological services offered and, therefore, to outline possible parameters for discussion and adjustment for the given procedure. A descriptive survey of information collected from closed records was carried out.We surveyed 422 medical records that were closed in 2019, of which made it possible to identify the factors, namely: waiting time for care, telephone contact difficulties and the specificity of emotional demand. These results allowed for a better understanding of the served clientele and, therefore, it was possible to consider new strategies in an attempt to reduce the evasion rate of the service, as greater visibility of the device, reaching a larger population, as well as the propagation of good results. We emphasize the importance of the constant production of studies like this one, aiming, through the availability of data, to maintain the teaching process and improve service to the public.

## 1. Introduction

Psychology is the science that studies human behavior and mental processes, such as feelings, emotions and thoughts. The profession of psychologist was regulated in the Brazilian territory on August 27, 1962, through Federal Law n° 4.119 [1], which establishes the legal and civil criteria to perform it and guarantee its exercise under the competence of a graduate degree in psychology. The aforementioned law states that psychology courses must organize assistance services for those students, under the supervision of professors, practice which they were taught in the undergraduate disciplines.

Given the above, the Psychology School Clinic appears as a place that allows for internships, in which students must exercise and apply what they have learned in the theoretical disciplines. Concomitantly, the university makes available to the community the provision of free

psychological care services. The School Clinic provides, on the ethical and didactic regulations, the documentation of supervised cases attended by students. Carefully filed records, which have a rich source of information for the development of quantitative research through documentary survey and data collection [2].

The Psychologist's Code of Ethics [3], specifically with regard to the development of research, provides, in article 16, that:

The psychologist, in carrying out studies, research and activities aimed at the production of knowledge and development of technologies: a) Will assess the risks involved, both by the procedures and by the dissemination of results, with the aim of protecting people, groups, organizations and communities involved; b) It will guarantee the voluntary nature of the participation of those involved, through free and informed consent, except in situations provided for specific legislation, and will respect the principles of this Code; c) It will guarantee the anonymity of people, groups or organizations, unless they have a clear interest; d) It will guarantee the access of people, groups or organizations to the results of research or studies, after its conclusion, whenever they so wish.

It is possible, through the medical records, information such as complaint, age, socioeconomic status, state in which the patient arrives for care, type of referral, as well as the possibility of quantitative analysis regarding the frequency of the public, permanence and psychosocial convergences. It is also possible, through the study of this model, to produce a qualitative discussion about the results of the procedures offered and the impact that the accessibility of care in the clinic-school provides to the community. Therefore, in view of the process of training students and community outreach services, vast research material is made available, which provides a rich contribution to the theoretical framework in the field of psychology.

The vast majority of care provided in clinic-schools of psychology covers the low-income population, enabling professionals and students to reflect on a socio-historical-political context and think about their ethical stance towards the society [4]. The clinic-school allows for the junction between practice, teaching and research, and can symbolize the place of discoveries and questions in both the psychological and social areas [5]. Traditional psychology is an area that has changed, as the model created ago does not reach the majority of society.

Through this study, it is intended to identify the main evasion factors of users of the school clinic. This theme has revealed a long discussion through academic articles, through which they opt for the terminology

"abandonment" of the therapeutic process, referring to the situation of interruption of treatment without any indication for such [6].

The case of reductions leads to a decrease in productivity of the clinical team while the costs of therapeutic procedures increase [7]. As a result, the community ends up not receiving the benefits of the treatment offered by institutions such as School Clinics. Dropout situations, which include the premature termination of care or patient desertion who did not start care, have shown a serious problem, according to the literature, with greater repercussion in patients with more severe clinical conditions, pointing out rates from 30 to 60% of evasion cases reported by community psychiatric services [8]. Therefore, the frequency of this type of investigation proves to be essential for planning and creating strategies that enable the improvement of the service provided.

Each school clinic has its specificities and it is important to know the characteristics of the population served, as well as the reasons that lead to their dropout, aiming to contribute to the improvement of services that meet the needs of the clientele, as well as promote adjustments in the service in order to increase adherence. For this reason, in the proposed study, we aim to characterize the reasons for evasion of the clientele seen in 2019, in a clinical school of Psychology.

## 2. Methodology

The Clinical School of Psychology (CEP), in which this study took place, was inaugurated in 2013 and serves the population of the region of Ribeirao Preto in the state of Sao Paulo, offering the following types of care: psychotherapy, psychodiagnosis, vocational guidance and neuropsychological assessment. It also offers psychological on-call services, receiving emergency cases in which, through observation, evaluate the possibility of an external referral or brief stay under focal psychotherapy.

The registration process for the service occurs through the scheduling of screening of interested parties, as well as through the psychological duty, which provides free and daily care to the population, either through spontaneous search or referred cases. The Informed Consent Term is presented, in which a therapeutic contract gives permission to use information for the production of academic studies. After the service, the medical record containing the description of the patient's demand remains filed in the waiting list until the moment of the beginning of the service, which takes place through an initial contact and subsequent scheduling.

At the school clinic, it was enabled the development

of our study, through which, by analyzing the medical records of closed and archived patients, we aimed to outline the evasion factors of patients in the year 2019, in order to produce content that serves for other studies that corroborate with the theme, as well as the possibility of elaborating strategies to improve the service offered at the school clinic.

In this study, we developed a descriptive analysis [9], through which information was collected from the disposal of 422 patients from ages 4 to 65 years old at the Clinical School of Psychology of Barão de Mauá University Center (CBM) in 2019. These records were closed and their consequent reasons for dismissal will be outlined during the discussion in order to obtain correlations for the development of considerations about needs and/or improvements to the services offered by similar institutions.

When the patient is disconnected from the service, the closing form (attached) is filled out, describing the reason for the dismissal, which are: discharge, withdrawal of the client, incompatibility of hours for care, if the patient is being cared for in another institution, change city, telephone contact difficulties and consecutive absences. It is worth noting that in this study we do not aim to discuss psychological demands, but peripheral information, such as age, modality and reason for disengagement from the process.

We emphasize that out of the 422, 98 medical records were dismissed due to discharge, thus going through the procedure offered at the clinic until its conclusion. Of the total number of cases, 180 consisted of the client's withdrawal as a reason for dismissal. In view of this, we considered the need to go deeper into the real reason for these withdrawals, so we contacted, through telephone calls, 180 cases from which we obtained better detailing of categories in line with the total number of medical records available for this study.

The comprehension of these data made it possible through the survey of the causes of dropouts, from which, through telephone contact, we deepened in order to obtain an exact picture for discussion. After collecting the data, we quantified it as a percentage for use in analysis and discussion.

The year 2019 was chosen for data collection, as it was the last year - until this study - in which the functioning of the school clinic completed its annual cycle with its standard procedures without changes. Thus, understanding the care provided by students in training, the triages by psychologists, the management of the sequence of patients available, as well as the closures made.

## 3. Results

Through the medical records analyzed for this study, we initially present the categorization of general data of volunteer patients from the year 2019, considering the following data: Age, gender, type of service and reasons for dismissal. Taking the 422 cases disconnected from the process offered by the School Clinic into account, we distinguished, based on the model of the human development cycle [10], cases initially by age.

**Table 1.** Age of assisted cases.

| Age of patients | The amount |
|---|---|
| Second Childhood (3 to 6 years old) | 17 |
| Third Childhood (7 to 11) | 75 |
| Adolescence (12 to 19) | 124 |
| Early adulthood (20 to 40) | 146 |
| Intermediate adult life (41 to 65) | 60 |

We highlight in Table 1, the age of the patients seen, distinguished according to the human development cycle model (Papalia 2013). As described in the table, the sample includes 17 cases that fit into the period of early childhood childhood (3 to 6 years); 75 cases in middle childhood (7 to 11); 124 of these configure the period of adolescence (12 to 19); 146 cases were in early adulthood (20 to 40) and 60 cases were in middle adulthood (41 to 65). From the total number of dismissed cases, we differentiated 239 female cases and 183 male cases.

**Table 2.** Categories of service modalities.

| Modality | The amount |
|---|---|
| Psychoanalytic Psychotherapy | 57 |
| Behavioral psychotherapy | 98 |
| Cognitive Psychotherapy Compt. | 39 |
| Phenomenological Psychotherapy | 32 |
| Psychodiagnostic | 90 |
| Neuropsychological | 17 |
| Vocational Guidance | 38 |
| Did not initiate procedure | 51 |

In Table 2, we categorize the types of care available at the School Clinic in question.

At modalities of care offered by the School Clinic, it is highlighted that 57 cases were treated in psychoanalytic psychotherapy; 98 cases by behavioral approach psychotherapy; 39 of the assisted cases undergoing cognitive behavioral psychotherapeutic care; 32 by

phenomenological psychotherapy; 90 cases started a psychodiagnostic process; 17 were turned off after starting a neuropsychological assessment; 38 of the cases joined for vocational guidance and 51 of the dismissed cases did not start care and had their records closed due to difficulties in contacting them by telephone.

The data collected in this study were outlined on the avoidance factors. The categorization, as well as its quantity, is presented in the table below.

**Table 3.** Categories of reasons for evasion of closed cases in 2019.

| Evasion justification | Quantity | % |
|---|---|---|
| Delay to start service | 3 | 1% |
| Health problems | 4 | 1% |
| Did not like the intern | 7 | 2% |
| Forwarded / Started private | 27 | 6% |
| Discharge | 98 | 23% |
| Changed city | 9 | 2% |
| Absences | 76 | 18% |
| Difficulty in phone contact | 165 | 39% |
| Scheduling conflict | 30 | 7% |
| Did not bring guardian | 3 | 1% |

According to the data in Table 3, we outline the dropout categories, covering cases that were disconnected from the procedures offered by the school clinic and their respective medical records filed.

## Delay to start service

From the moment of triage or psychological duty, the patient is referred to one of the available waiting lines. However, the wait estimate becomes difficult, understanding that the flow of demand for care depends on the discharge or withdrawal of patients already in care. We found that 1% of patients stated that waiting for care was the reason for giving up.

## Health problems

During the telephone contact process, 1% of patients reported being unable to continue with their sessions due to health complications, hospitalization or immobility.

## Did not like the intern

It was noted that 2% of participants highlighted the complaint about the difficulty in establishing a therapeutic bond with the available intern. It was also noted that even though this number is small, the pretext deserves considerable attention aimed at the adequacy and preparation expected of an intern for the service whose complaint is real.

## Forwarded/Started private

In triage, 6% of patients, whose demand revealed a certain emergency, were referred to another service with availability. Among the referrals, the private psychotherapeutic care revealed to be a welcoming tool, which, when there is a financial provision, emerges as a preferable option.

## Discharge

We do not consider discharge as a reason for evasion, but completion of the processes offered by School Clinic. Therefore, 23% of patients were discharged through either compliance with the 2-year length of stay in care; reduction or extinction of the symptom and revealing an improvement in the patient's quality of life, or completion of evaluation processes without findings that require permanence under psychological monitoring.

## Changed city

It was noted that 2% of dropouts were due to a change in the patient from the city of Ribeirao Preto. Changes occurred while patients remained on hold for care.

## Absences

It is noteworthy that the importance of attention to absence is elucidated in the first visit to the patient. Limiting two consecutive absences or three intercalated ones, so that the medical record is turned off. However, 18% of closed cases were due to absences in the care.

## Difficulty in phone contact

39% of medical records were disconnected due to difficulty in contacting patients by telephone. According to established rules, contact attempts must be made four times, on different days and times. More than one telephone number is commonly requested, however, telephone changes frequently and the medical record is outdated, thus making it difficult to contact the patient to start or continue the therapeutic process.

## Scheduling conflict

The school clinic works during business hours and on Saturdays in the morning, however 7% of patients find it difficult to adapt their schedules to those available for

appointments, such as outside of working hours proposed.

## Did not bring guardian

On the other hand, 1% of the dismissed cases were due to the lack of documentation necessary for the admission of underage patients. It is a standard of the clinic the need for copies of documents of the person responsible and the patient with a photo and proven custody.

It can be identified with the survey of evasion factors, that the difficulty of contacting users by telephone was the main reason for the filing of medical records, the length of stay in the waiting list and the failure to update the record by patients can be considered factors that influence this result.

## 4. Discussion

The waiting period between the triage service and the start of treatment is directly related to the user's evasion of the service at clinical schools [11]. Creating a method to increase users' awareness of the importance of keeping their records up to date can be a tool to reduce the rate of patients who are out of telephone contact.

It is important to know the economic, historical, social and cultural conditions in which the service user population is inserted [12]. Another factor that may be correlated with the number of dismissals due to absence is the age group of users dismissed, as 49% of the sample used in the study is between 20 and 65 years old, an age group that is considered the most active in the labor market.

The age groups from 25 to 39 years old and 40 to 59 years old correspond to 77.9% of the contingent employed in the 4th trimester of 2019 in Brazil [13]. One hypothesis for the user to be absent would be difficult in reconciling the work routine with the time required to go to the clinic and the duration of each service.

Over the years, psychology has established itself as a field of knowledge and practice strongly based on the clinical aspect. Although it is currently disseminated in several other sectors, such as social assistance, schools, organizations and the justice system, the clinic continues to occupy a relevant space in professional training.

School services in psychology are places that allow the development of the teaching, research and extension tripod, by enabling and providing services to the community, the training of future therapists, as well as the production of knowledge through research [14].

It is important to highlight that the delay in receiving care in the public sector through its waiting lines points to the consequence of the great demand for psychological care in the city. Patients with mild to moderate psychological distress end up waiting for follow-up at the institutions. With this, the provisions of the School Clinics reveal effective cooperation with mental health, providing dissolution of excesses in the waiting lines, and making it possible to reduce damage and support the quality of life for patients in distress and unable to pay for private care.

The second biggest reason for evasion in 2019 was the number of absences by the user during the semester in which the service was taking place. When the user is seen for the first time, the clinic's rules are clarified and a consent form is signed, which contains the information that two consecutive absences or three interleaved absences will cause the user to be disconnected.

The hypothesis to be considered as a possible motivator for treatment to dropout is the fact that, in some cases, the patient may experience difficulty in getting in touch with the issues that generate suffering, knowing more about themselves and verbalizing their anxieties. This can mobilize the patient to the point where he or she no longer wants to continue with the treatment [15].

As explained in this article, the two categories with the greatest coverage were absences and difficulties in telephone contact. From the absences, it was revealed to the potential socioeconomic background, constituting, for the most part, patients whose age fits the pattern of occupied. School clinics that offer greater scope in their operation end up involving the dissolution of the hypothesis that economic occupation is the aggravating factor of this highlight. Dismissals due to difficulty in telephone contact represents a demand of greater importance for the institution, which can happen in the initial interview, in a triage or on-call. In the process when the volunteer patient enrolls in the waiting lists, they are already instructed on the importance of providing more than one contact phone, as well as updating the registration data in case of changes. As already mentioned, a possible method considered in an attempt to mitigate this data could be a greater highlight during the registration process, the importance and responsibility of the patient interested in keeping the School Clinic updated, perhaps emphasizing the consequent consequence of disconnections by the reason for contact changes.

## 5. Conclusions

The present study aimed to corroborate the attention focused on two important aspects, namely the attention to the psychological demand of the population of Ribeirao Preto and region, as well as the care with the clinical internship process during the graduation of psychology students. The analysis of problems involving these themes reveals the

validity when considering that lead to the aggravation of evasion by giving up on therapeutic procedures.

The result obtained denoted that the evasion of the 2019 cases both the lack of availability of the adult public, as well as their emotional barriers to proceed with the treatment. Although the difficulty of adherence due to internal obstacles sustains the individual portion of each patient, it is considered that the population's continued availability for treatment and notoriety of institutions such as the clinical school, either through the good results or popularity of the procedures offered, may results in a potential improvement in adherence and permanence of cases in care.

Other studies like this one also sought to distinguish factors of abandonment or low adherence of patients in psychological distress over the years. It is noted that the constant production of this type of analysis reveals to be a formidable tool for the continuous development of strategies to maintain the teaching processes and its consequent improvement in the service provided to the public. As explained in the introduction to this work, the device of the clinical schools represents a remarkable cooperation with mental health and service to the public in the region. Thus, the constant review of results on topics involving clinical schools, whether through the analysis of patient evasion or other problems, emerges as an intrinsic part of the support for academic training in psychology today and its impact on society.

## Conflict of Interests

The authors declare that there is no conflict of interest regarding the publication of this article.

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## REVIEW
# Literature Review of Measurements of Personality Traits across Cultures

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| ARTICLE INFO | ABSTRACT |
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| | After more than one century's exploration from academia, both researches and measurements related to human personality traits have been fully developed with the effort of many researchers. *Big Five*, as one of the most popular assessments for personality traits, was formed based on the etic approach assuming there should be a universal or generalizable measurement for personality traits across cultures. However, with the increasing impact from different cultures as well as in-depth understanding from researchers, more doubts of etic approach on measuring personality were proposed. Emic approach stressing the significance of specific-cultural method in anthropological research has been accordingly investigated. The following *Big Six* and *Big Seven* scales were constructed under this approach. These measurements were already examined to have higher validity and reliability on measuring personality traits when implementing in the relevant group of people. Therefore, this study was supposed to give a literature review summarizing the definition process towards personality traits, the specific content and development of the mentioned measurements using etic and emic approach, the measurement issues based on the relevant researches, and some further considerations for etic and emic approach in assessing personality traits. |

## 1. Introduction

Back in the mid-19th century, personality first emerged in the study of anthropology. The initial step that most researchers investigate the measurements of human personality traits is to explore a comprehensive understanding of what exactly is personality. Kajonius and Mac Giolla in their article defined personality as the cycle process of people's thinking, affective feeling, and external behaviors, which has strong heredity and stability

over time [1]. With the advancement in personality research, Church stated that the conceptualization of personality construct should be more comprehensive by considering the influence of various cultures [2]. Thus, more additional elements such as dispositional traits, the adaptation of personal characteristics, and life narratives within cultural contexts, were incorporated into the understanding of personality. During the period of capturing the meaning of personality, numerous cross-cultural researchers became

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interested in the interactive process between personality and culture by comparing human personality traits across cultures, also known as etic research. This type of research focused on building the universality of existed Western personality models by testing the invariance of personality structures cross-culturally [3].

According to many empirical researches, the Big Five model was believed to be the most predominant model that most cross-cultural researchers used to measure personality, thus making it central to understand personality [4]. The Big Five model has received wide consensus on its capability of capturing the universal personality factors despite different cultures, economic status, social environment, and human behavioral expression. However, the model was argued by its lower replicability of personality structures factors across cultures, and this model was mainly designed to understand personality and human behaviors in most Western countries. For this reason, other models of personality traits such as Big Six and Big Seven were developed by using the emic approach to capture personality traits outside Western countries. These personality models were examined to have strong correlations with the Big Five models [4]. However, cross-cultural researchers also found that some differences exist among Big Five, Big six or Big Seven. A further suggestion for assessing personality was shown in the previous article, which is known as the combined Emic-Etic approach. The main idea of this approach is to help cross-cultural researchers to build a comprehensive framework in personality that are universal and cultural-specific. The integration of both etic and emic approaches would expand people's understanding of personality at a universal level [3].

This literature review will start by reviewing literature that explores and defines personality. This can assist people to understand how people conceptualize personality. The next part will conduct after searching for more references that illustrate etic approach in cross-cultural research and measurement issues around this approach. Importantly, some well-known measurements models such as Big Five, Big Six (HEXACO), and Big Seven were highlighted under etic approach. At the end of the review paper, it summarized and discussed some considerations for investigating personality structures using etic measurement.

## 2. Literature Review

### 2.1 A Comprehensive Understanding of Personality Trait

According to Mc Adams and Pals study, a whole

description of one person's life should include the examination of the different patterns of their dispositional traits, the adaptive process of characteristics, and life narratives that embody life in details, where all are satisfied with the demands of species evolutionary and impacted by cultural elements at the same time[5]. This broad notion was summarized by Church who distinguished four personality aspects with unique values: evolved universal human nature, dispositional traits, characteristics, as well as life narratives [2]. "Evolved universal human nature" stress the primitive satisfaction of humans such as basic survival, psychological well-being, and species reproduction through the adaptions of original needs, motives, affect, and mental mechanisms. "Dispositional traits" regard to the personal difference within a broad set of dimensions. For instance, two dimensions called extraversion and conscientiousness are supposed to explain the degree of behavioral consistency across various cultures. Most personality psychologists treat dispositional traits as fundamental tendencies or temperaments based on biological perspectives. "Characteristics adaptations" are mainly about the components such as goals, values, beliefs, or self-cognition that caused other individual differences and may contribute by the interactive process between the basic tendencies and external influence from environment, such as culture. The last one is life narratives, which refers to how unique personal experiences or stories people constructed were integrated into the meaningfulness, coherence, as well as identity of their life [5].

Notably, Church stated that different psychological perspectives conceptualize personality differentially. He pointed out that cross-cultural psychologists, who are more likely to use an etic approach in studying personality, focus on dispositional traits and characteristics [2]. However, cultural psychologists who tend to apply the emic approach to personality research emphasize characteristics adaptions and life narratives.

### 2.2 Etic Approach of Personality- A Cross-cultural Perspective

In general, cross-cultural researchers have stressed more on the difference of dispositional traits and characteristics adaptations of individuals. They are more likely to compare multiple cultures to find cross-cultural generalizability or universals. In the past thirty years, numerous cross-cultural studies have emerged that often use an etic approach to emphasize the comparability of human personality traits across various cultures [2]. In addition, culture is considered as relatively fixed and "outside" the individuals when researchers adopt the

cross-cultural perspectives. Through the application of traditional measurements, personality traits are measured in a manner that ignores the additional contexts (e.g., cultures). Based on Van de Vijver and Leung study, etic approach designed to examine the feasibility and practicability of current personality constructs or measurements when they are exposed to the novel cultural context [6]. Therefore, the underlying structures, mean levels, and correlations of personality construct would be compared during the process.

### 2.2.1 Big Five Model

Internationally, the most prominent example of the etic approach in cross-cultural personality research is a five factors structure called Big Five, or Big Five Model (FFM). The Big Five Model has received a wide consensus from personality researchers. The common labels for these five factors or five broad personality domains are: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness [7]. Many researchers agreed that the structure of FFM related to basic human biological tendencies, and by excluding the elements of cultures, FFM can describe personality in across all cultures [8]. Aligning with Church's article, there is sufficient evidence that dispositional traits are biological to a huge extent and, that traits are not just cultural products [2]. Meanwhile, Kajoinius and Mac Giolla stated that a huge amount of evidence supports the usefulness of FFM in measuring personality across different countries or ethnic groups, which further suggest that personality is cross-culturally equivalent to some extent. They pointed out that based on the research results from Japan, Germany, and Canada, the notion of universal FFM and its link to genotype was confirmed. In addition, the sex difference on the personality traits was replicable across different countries. For example, a higher level of Neuroticism and Agreeableness on woman have been noted across 56 cultures through self-report measurement [1]. A similar statement was also noted in article of Benet and Waller, which demonstrated the existence and universality of FFM in more than 50 societies across different continents. Besides, Big Five traits were examined to associated with a series of psychological outcomes, which included performance on employment, satisfaction in personal relationship, leadership, educational outcomes, internet indulgence, as well as health condition [5]. The above showed the significant influence that FFM has had on the general human life [4]. Therefore, the reliability and practicability of FFM have let many personality or cross-cultural researchers to advocate that this model is the fundamental framework for describing and assessing personality.

According to Kajonius and Mac Giolla's article, the FFM has been examined in many countries with different languages using the Revised NEO Personality Inventory (NEO-PI-R) or the BIG Five Inventory (BFI) [1]. In Marsh et al.'s article, they summarized several additional instruments are used to measure personality traits, and part of the additional instrument is known as the family of NEO instruments includes the 60-item NEO-Five Factor scale [9]. These instruments are used widely by many researchers and received lots of attention.

Despite a growing consensus on FFM, some concerns have been recently raised by many researchers. One major issue concern is the exaggeration of FFM universality [4]. When researchers try to measure human personality traits, most of the time they are targeting and measuring the traits from FFM. This has created two issues. The first one is that the five traits in the FFM cannot be fully embodied or replicated in certain circumstances. For instance, Gurven et al. tested the FFM in a huge illiterate and indigenous group of people in Tsimane instead of the often-targeted literate and urban population. The result showed that just two out of five factors, industriousness or Conscientiousness, and pro-sociality or Agreeableness could be embodied, and the authors argued that these two factors might be the common principles that reflect socioecological characteristics in the small societies [10]. They finally proposed that personality factors are likely to be limited by education level and the characteristics of the targeted samples (i.e., rich, or the poor people). Three out of traits in the FFM: Agreeableness, Conscientiousness, and Extraversion were established in some other research. The Openness factor in the FFM is not likely to be retrieved in many cross-national studies. For instance, Openness was not found to be a salient personality dimension in China [3]. The next issue is that other personality traits not included in the FFM are excluded, thus limiting the ability to fully understand human personality traits. The emerged traits outside of the FFM such as Honesty-Humility in the Big Six Model, Negative Valence, and Positive Valence are the obvious evidence that shows that FFM structure is insufficient.

### 2.2.2 Big Six (HEXACO) Model and Big Seven Model

At present in Feher and Vernon's article, the HEXACO, a personality model with six factors, is developed via the etic approach and applied to certain amounts of countries all over the world. All six factors in the HEXACO are Extraversion, Agreeableness, Conscientiousness, openness, Emotionality, and Honesty-Humility. The sixth

trait factor, labeled as Honesty-Humility, has been shown to be a salient factor in many cross-cultural studies. The Honesty-Humility factor mainly refers to the fairness and modesty that was embodied by some cultures. Some measurements used to assess this personality trait model were also established [4]. Although Ashton and Lee said that although understanding some factors in the HEXACO such as Agreeableness and Emotionally are slightly different from the FFM, there are strong correlations between HEXACO and Big Five corresponding factors such as HEXACO Openness and Big Five Openness [11]. Meanwhile, Big Five Agreeableness and Honesty-Humility in the HEXACO showed a significant positive relationship. Gaughan et al. pointed out that the correlation of the similar constructs in FFM and Big Six model range from .52 to. 87, but the correlation between Honesty-Humility and Agreeableness in the two models is almost .07. Despite the similarities between two model, the predictive power of the HEXACO was found to be higher than the BBF in many criteria, such as psychopathic traits, risk-taking, hope to take power, and business decision [12].

After carrying out a series of empirical studies, Almagor et al. showed the existence of the underlying seven higher-order factors. They stated that the five factors in the Big Seven model were to some extent similar but not the same as those in the FFM. These seven factors are Negative Emotionality, Positively Emotionality (similar to Neuroticism and Extraversion in FFM, respectively), Agreeableness, Dependability (similar to Conventionality in the FFM), Unconventionality (similar to Openness in the FFM), Positive Valence (PV), and Negative Valence (NV). The two new factors PV and NV stand for the extremely positive and negative self-evaluation, respectively. In the few decades after the inventory of the Big Seven Model developed, more and more personality researchers have found similar seven-factor models across different cultural samples and languages, including Hebrew, Spanish, and Tagalog. Although the derived seven-factor structures are not completely the same, all of them identified the similar PV and NV factors showed in the original work of Almagor et al. [13].

### 2.3 Measurements Issues in Etic Approach

Although these etic personality inventories have been applied widely, some measurement issues still exist. First, the source of cross-cultural research bias is found to be more than the bias that can be detected by prevailing equivalence procedures. There are three sources of bias: construct, method, and items. Some researchers noted that all personality constructs were established in Western countries. Thus, it would have some construct bias when transporting these personality measurements into a non-Western culture such as Asian culture (e.g., the understanding of the Openness factor between Western countries and East countries is different). Method bias is mainly caused by systematic distortions (i.e., differential response styles) [3]. Although Harzing identified a stable cross-cultural difference in response style within 26 countries, that type of difference should be further studied in future research. At the item level, the bias is frequently found during the process of test adaptation when an item written in one culture is hard to apply to another culture [14]. According to the study of Osterlind and Everson, many advanced tools are developed and used in finding item bias [15].

The second methodological issue in etic personality instrument is the gap between substantive theories related to the difference in personality structures and the equivalence of personality models as well as the corresponding inventories (e.g., FFM and NEO-PI-R). The current framework on the cross-cultural difference in personality are relatively humble, and most of them only stress the difference on the mean score [3]. Also, as stated in Church's article, several researchers only summarized the cross-cultural personality difference by comparing personality traits at mean levels across different cultures [2]. However, Terracciano et al. indicated the correlation between the mean personality profiles and the national personality profile is relatively small [16].

## 3. Discussion

Based on the information mentioned above, two further considerations are provided here so that etic personality models can be refined to better capture the personality traits across cultures. First, researchers should pay attention to the generalizability of the etic personality models across cultures when conducting cross-cultural research [17]. As mentioned before, these personality traits models were established in Western countries. Thus, researchers should consider if these models could be highly replicated in other countries or cultures. As Feher and Vernon stated in their article, the ability to capture components within non-Western contexts is weak [4]. Therefore, it is valuable to explore other personality traits or components outside of the existed etic models are valuable (e.g., the factor "Interpersonal Relatedness" was found during learning Chinese personality traits). In addition, it is meaningful to increase the sample diversity when testing these personality models. Specifically, people with varied characteristics should be included in the research instead of including only those well-educated, comparatively rich, urbanized, and western samples.

Otherwise, the universality of these etic personality models cannot be ensured [1]. Here, it is necessary to advocate a useful approach that can support the development of the etic personality models. For instance, emic approach is a useful way to capture unique constructs of personality traits in non-Western cultures. The major contribution of the emic approach in personality researches is the identification of indigenized of personality traits during the process of learning thoughts and behaviors within a particular culture. The combination of both the etic and emic approaches in learning personality traits has been proposed by many researchers. The biggest goal of this integration is to fill the gap between the mainstream personality model and indigenous components, and further provide a comprehensive framework in personality dimension [3].

The second consideration is at the measurement level. As mentioned in the issues of etic personality measurements, some types of bias in personality measurement are found. Luckily, some equivalence or invariance procedures are designed to invert the bias, such as conceptual equivalence, linguistic equivalence, and measurement equivalence. Regarding the measurement equivalence, Vandenberg and Lance said that both exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) are better tools to ensure the measurement equivalence [18]. However, Marsh et al. indicated that CFA has failed to support the FFM and its inventory (e.g., NEO instruments) although EFA has consistently detected the factors in the Big Five. Such limitation in statistical tools has led more researchers to question the structures of the Big Five and other relevant models at the measurement level [9].

## 4. Conclusions

Previous research has shown the popularity and importance of the etic approach in conceptualizing personality traits across cultures. Some well-known personality models, such as FFM, Big Six model, and Big Seven model, have already gone through a series of refinement as they are applied to various countries. Although these personality models have fainted popularity worldwide, they are still subjective to issue with universality and replicability. Also, bias and inequivalence in its measurements still existed. Accordingly, the suggestion of a combined etic-emic approach and increasing reliance on CFA to increase the measurement equivalence in personality research is proposed.

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**EDITORIAL**
# Integrating Etic and Emic Approaches in Psychological Research

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Amid an ever-expanding embrace of globalization, there is also a growing emphasis on understanding human psychology in a specific local context. Moberg cautioned that any attempts to ignore particularities while favoring globalization or universalim in psychology might not only be unrealistic but probably dangerous [1]. To conduct realistic psychology research, it is necessary to integrate both etic and emic approaches. The etic approach refers to global and universal aspects, while the emic approach refers to subjective and contextualized aspects of human psychological functioning [2].

Embracing the integration of etic and emic approaches, research in various areas of psychology continues to not only deepen but also expand it. Such integration also calls for a mindset of innovation [3] which involves innovative decision-making based on the cognitive processes in defining what is possible [3] and what is necessary [4]. In other words, the integration of etic and emic approaches in psychological research requires discerning what is possible and necessary in a given context, either universal

or local.

For example, since the September 11 terrorist incident in the United States, there have been several research papers that focused on terrorism and resulted in many etiological theories and opinions regarding pathways to terrorism and individual risk factors for terrorism [5-7]. Expanding this area and further closing the gaps in this particular research domain, in this issue, Sukabdi investigated the psychological criminogenic factors for identifying terrorist offenders at risk of recidivism in Indonesia [8]. Further, Maciel and colleagues surveyed the evasion factors of psychology school clinics in Brazil and concluded that each school clinic surveyed had its specificities, and thus it is important to know the characteristics of the clients, as well as the reasons that make them drop out from schools in Brazilian cultural and educational context [9]. Conducting an expressive arts-based therapeutic intervention with the traumatized adolescents in India, the authors Sharma and Dhawan reported significant differences in the participant's self-

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reported checklist of behavioral and emotional difficulties after the expressive arts-based intervention [10]. These articles in this issue of the *Journal of Psychological Research*, to a certain extent, depict the possibility and necessity of integrating the etic and emic approaches in psychological research.

The *Journal of Psychological Research* (JPR) provides a great chance for researchers to contribute and promote the study of various fields of psychological research that integrate the etic and emic approaches that are not only possible but also necessary for innovative and useful results. The JPR is a peer-reviewed, multidisciplinary, and international open-access academic journal, focusing on various aspects of psychology, including but not limited to Psychoanalysis, Cognitive Neuroscience, Clinical Psychology, Applied Psychology, Experimental Psychology, Social Psychology, Developmental Psychology, Counselling Psychology, Educational Psychology, etc.

The JPR adheres to the highest possible academic and publishing standards and a stringent peer-review process to make sure that high-quality papers are published. The Journal also ensures that the reporting of research work is scientific, truthful, precise, and practical. The JPR sincerely welcomes all researchers from across the world to publish relevant research articles.

Additionally, given the multidisciplinary scope of the JPR's contents and to ensure that the submitted research manuscripts across various disciplines covered by the JPR can be reviewed on time by the experts in the appropriate discipline, the editorial board has many professionals, representing the distinct fields of psychology and various academic institutions located all over the world. The JPR invites more professionals to join the editorial team and contribute to both the development and expansion of the Journal by your service through review of the submitted articles and publication of your articles in JPR.

Finally, the management and editorial team of JPR continue to focus on innovative research methods, commit to providing theoretical and practical experience for all those who are involved in interdisciplinary research, strive toward publishing original and quality research papers, offer a rapid review, and instantly disseminate research findings to the readers. The Journal is also aiming to increase its accessibility, readability, and impact factor so that JPR can be indexed and made more relevant. In this process, we solicit the cooperation of the management team, editorial board, reviewers, researchers, and readers.

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