

**IMPACT OF BEHAVIORAL INOCULATION AMONG ADOLESCENT:
A COMMUNITY BASED PSYCHOSOCIAL APPROACH**



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DECLARATION

I, **Mr. Abdur Rahman**, Registration No. **75-FSS/PHDPSY/F-18**, student of **PhD** in the subject of Psychology, session **2018-22**, hereby declare that the matter printed in the thesis titled: **impact of behavioral inoculation among adolescent: a community based psychosocial approach** is my own work and has not been printed, published and submitted as research work, thesis or publication in any form in any University, Research Institution etc in Pakistan or abroad.

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Certified that the research work contained in this thesis titled: **IMPACT OF BEHAVIORAL INOCULATION AMONG ADOLESENT A COMMUNITY BASED PSYCHOSOCIAL APPROACH** has been carried out and completed by MR. ABDUR RAHMAN bearing Registration No. **75-FSS/PHDPSY/F18** under my supervision.

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Dedication

I dedicate this study to my late Grand Father Mr. Ahmad Khan, my sweet and loving parents, Siblings my cutie daughter Amber Khan, my son Affan khan and my wife Azra Ghazala.

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Abstract

The present research comprises two studies aimed at evaluating the impact of behavior inoculation within the context of a community-based psycho social approach on adolescents. Study 1 primarily focuses on the development, standardization, and psychometric assessment of a life skills scale designed to measure various personality characteristics. These characteristics include decision-making and problem-solving skills, critical and creative thinking skills, communication and interpersonal skills, self-awareness and emphatic skills, coping with emotions skills, and coping with stress skills, along with cognitive skills. The study encompasses three key phases: identification of relevant domains and item generation, data

collection involving 350 participants aged 14 to 24 years using the 46-item scale, and empirical analysis utilizing diverse statistical techniques. The hypothesis posits a positive correlation between the life skills scale and social-emotional competence, while an inverse correlation is assumed with the depression anxiety and stress scale.

In Study II, the primary investigation is conducted to fulfill the overarching research objective. The sample (N=50) is selected through purposive convenient sampling from young adults aged 14 to 24 years in the Khyber Pakhtunkhwa region. Alpha reliability coefficients are established using a substantial adult dataset. The life skills scale, the Depression Anxiety Stress Scale (DASS) administered before and after the intervention, and DASS are applied to the participants. The observed correlations between variables indicate varying degrees of association. For instance, the correlation coefficient between LSS-Pre and LSS-Post is 0.055, while the coefficient between LSS-Pre and DASS-Pre is 0.212. Similarly, non parametric correlations highlight the relationships among variables, ranging from very weak to moderate. Notably, t-tests reveal that the post-intervention group exhibits significantly enhanced life satisfaction (mean difference: 151.88) and increased psychological distress (mean difference: 54.68) compared to the per-intervention group. The study explored the impact of a community-based psycho-social approach involving behavioral inoculation on adolescents. The research focused on hypotheses concerning the assimilation of the inoculation message and its effects on attitudes, certainty, and the persistence of these attitudes. The results indicated that participants who were exposed to the inoculation message exhibited more favorable attitudes compared to those who did not receive supplementary information. Furthermore, message recipients demonstrated heightened levels of certainty regarding their attitudes. Moreover, participants who received the inoculation message maintained their positive attitudes and certainty over time, particularly when contrasted with highly engaged participants who did not receive additional information. Remarkably, individuals with preexisting positive attitudes who were exposed to the inoculation message were more inclined to uphold their positive attitudes and certainty compared to those without supplementary information. Overall, these findings underscore the efficacy of behavioral inoculation in fostering positive attitudes among adolescents. They emphasize the significance of a community-based psycho-social approach that tackles contextual psycho-social factors. This research contributes to our comprehension of behavioral inoculation as a viable strategy for cultivating positive behavioral outcomes in adolescents.

Keywords: Behavior Inoculation, Community-based Psychosocial Approach, Adolescents

Introduction

Background of the Study

Social scientists and healthcare professionals are well versed with the term's vaccination, immunization and Inoculation. Here the term behavioral inoculation is used. The simple meaning of inoculation is to insert something but it must be safe and harmless. Behavioral inoculation means the psychological immunization of someone in regard to a special condition like anxiety or stress etc. Therefore, we can say after a specialized training or session taken for a special purpose, that the individual has been immunized against the treat or situation he/she was confronted to. Actually, behavioral inoculation is the psychological assistance taken by an individual. Introduction of this term to psychological professional community goes to McGuire (1964). Inoculation practices are carried out in different social, educational and other related issues. McGuire (1964) developed a theory known as inoculation theory. Behavioral inoculation is a psychological technique that involves preparing individuals to resist persuasion or influence attempts by exposing them to weakened versions of the argumentations or tactics they are facing (Meichenbaum, 2017; Lewitus & Schwartz, 2009). It is based on the concept of medical inoculation, where a weakened form of in a shape of vaccine is introduced to a person in order to build or create their immunity against the said disorder. For example, if a person is likely to be exposed to persuasive messaging that encourages them to engage in risky behavior, such as using drugs or alcohol, a behavioral inoculation approach might involve presenting them with messages that highlight the negative consequences of such behavior and encourage them to resist peer pressure (Stiff & Mongeau, 2016).

In the context of persuasion, behavioral inoculation typically involves presenting individuals with arguments or messages that are similar to those they may encounter in the future, but that contain weaker or flawed reasoning. By doing so, individuals are able to develop counterarguments and resistance strategies that can help them withstand more persuasive messages when they encounter them later on. Research has shown that behavioral inoculation can be an effective strategy for

building resistance to persuasion and influence attempts in a variety of contexts, including public health campaigns, political messaging, and marketing.

Inoculation Theory

Inoculation research examines the process by which people can be made resistant to persuasion. How the vulnerable community will be made educated and prepared psychologically for easy handling of psychological correlates (Wood, 2007). The goal of inoculation theory is to strengthen currently held attitudes modification and update in attitudes, thereby building psychological resistance and coping to future persuasive attacks. These attacks are the psychological disorder which disturbs the vulnerable community (Seiter & Gass, 2003). The theory of attitude inoculation is based on early research studies. These researches are about one-sided and two-sided messages. One-sided messages are messages that only consider one side of the argument and don't compose their benefits or reply of the victim or the therapists, for example "alcohol is bad for you". On the other hand, two-sided arguments look at both sides of an argument. For example, drinking alcohol is bad for you but it also helps you having a good time and you can enjoy. This message contains both bad and good messages related to alcohol drinking (Jackson et al, 2017). Both one-sided and two-sided messages had the same short-term, medium and long-term effect, the effect of two-sided messages was more long lasting, especially when the contradictions were refuted in the message. Inoculation theory claims that attitude inoculation resembles the process of medical immunization (or "inoculation"). This led to the idea of "attitude inoculation" (Ivonov et al, 2018; McGuire & Papageorgis, 1961).

Similar to individual medical immunization, the process involves exposing a person to a milder form of a virus, which triggers the immune system to generate antibodies and develop immunity against the virus. This concept can be extended to beliefs and attitudes, as proposed by McGuire. By exposing individuals to weaker forms of opposing arguments or retort, their cognitive defenses are activated, allowing them to fortify their beliefs and attitudes. As a result, when they encounter more potent challenges in the future, they are better equipped to withstand

them, similar to how the body resists illness after prior exposure to a non-weakened virus (Ivonov et al, 2018). When individuals are presented with weak arguments that counter their existing attitude, accompanied by refutations, it enhances their resistance when they encounter stronger denial in the future. It is crucial for the threat to be potent enough to activate the individual's defensive mechanisms, while simultaneously avoiding such strength that it negatively influences the current attitude. Striking this balance is vital in effectively leveraging the inoculation strategy to strengthen resilience against attitude change (Pfau et al, 2006).

Inoculation theory is a theory in social psychology and communication that describes how attitudes or beliefs can be safeguarded against persuasion or influence, similar to how the body can be protected against illnesses by pre-exposure to weaker versions of a stronger future threat. The application of inoculation theory requires the use of safe and harmless techniques. The theory draws an analogy between medical inoculation and the protection of attitudes or beliefs against persuasion or influence. It has the potential to enhance the public's immunity to misinformation, including rumors, fake news, and emotionally manipulative marketing and political messaging. By applying inoculation theory, we can address issues such as science denialism, risky health behaviors, and the deterioration of people's psychological state caused by the spread of such misinformation in society. In 1961, social psychologist William J. McGuire formulated a theory aimed at elucidating the process of altering attitudes and beliefs, with a particular focus on strategies for maintaining the stability of existing attitudes and beliefs when confronted with efforts to modify them. This theory provides insights into the mechanisms underlying attitude change and the methods that individuals employ to safeguard their preexisting convictions from being swayed (McGuire & Papageorge, 1961; Compton, 2013). Inoculation theory serves as a motivational approach aimed at safeguarding attitudes against alteration and providing resistance to counter-attitudinal influences. These influences may manifest in various forms, such as direct attacks, sustained pressures, or indirect attacks from sources like the media, advertising, interpersonal communication, peer pressure, and other tempting factors (Ivanov, 2017).

According to the theory, when weak riposte are presented to individuals, it triggers a sense of resistance within them, empowering them to uphold their beliefs even when confronted with more powerful opposing arguments in the future. After being exposed to these weak counterarguments, which are often accompanied by refutations, individuals are inclined

to actively search for supportive information to fortify their position that is being challenged (Ivanov, 2017). Once an attitude or belief is established, it becomes resilient against stronger attacks, much like the concept of a vaccine in medicine. Inoculating messages, which serve as a form of protection, can be delivered on the same topic as the threatening message (reputational same) or on a related topic (reputational different). To enhance the effectiveness of the inoculating message, it can be framed to appear personally significant and immediately relevant to the recipient, leveraging Jack Breh's psychological reactance theory. The discussions that occur after inoculation are crucial since receivers can spread their resistant mindset to their social network, and engaging in conversation with others reinforces their own resistance to attitude change (Organ, 1974).

Therapeutic inoculation is a recent addition to communication theory that introduces messages with a twofold purpose: not only do they aim to persuade and modify mistaken attitudes, but they also act as a protective shield, helping individuals fend off potential future challenges to these attitudes (Organ, 1974). In simpler terms, this concept entails using messages that not only persuade people to change their erroneous beliefs but also provide them with the tools or resistance to withstand future attempts at altering their viewpoints. It's analogous to a mental vaccine, enhancing people's receptiveness to new ideas while fortifying their ability to resist contradictory information in the future (Meichenbaum, 2017). This approach proves especially valuable in contexts where misinformation or conflicting beliefs are widespread, as it empowers individuals to uphold their adjusted attitudes when confronted with ongoing challenges. This technique is a type of therapeutic intervention. An example of the technique is stress inoculation therapy. This technique is based upon the said principles and values. It helps the patients to prepare their psychological immune system in advance to handle the stressful events with minimum harm (Ivanov et al, 2022). Stress inoculation therapy resembles with relapse prevention techniques used by mental health professionals in the treatment of psychoactive substances. In both of these techniques the patients are given education and training in advance, how to handle the stressful circumstances effectively, how to decrease vulnerability to the conditions etc.

In the last they are also trained to cope and steps taken by them when they are confronted with the said situation (Meichenbaum, 2017).

Mechanism of Inoculation

An inoculation message comprises of two components: a threat and a reputational preemption of that threat. The presence of a threat element in the message raises participants' awareness regarding the susceptibility of their attitudes. On the other hand, the reputational preemption aspect equips participants with the necessary information to reinforce their existing attitudes (Compton & Pfau, 2007). In the following paragraphs, both concepts are explained more elaborately.

Threat

The inoculation message begins by presenting a challenge to the existing beliefs or attitudes of the recipient, suggesting that these beliefs are being targeted or challenged. This challenge serves as a trigger that motivates the individual to recognize the vulnerability of their current attitude, thus increasing their motivation to reinforce it. As a result, the individual becomes inclined to actively engage with and comprehend the inoculation message, initiating an internal process of building resistance (Compton & Pfau, 2004; Pfau et al, 2001). Inoculation theory offers a comprehensive shield that guards against both explicitly addressed rejoinder in reputational preemption and that rebuttal left unaddressed. It is worth emphasizing that the utilization of inoculation theory prompts individuals to consciously engage in information processing. This pertains to the Elaboration Likelihood Model (ELM), a framework that offers insights into the mechanisms involved in persuasive communication messages. The ELM operates on the premise that individuals are neither capable nor inclined to thoroughly assess every message they encounter. According to the Elaboration Likelihood Model (ELM), attitudes formed through the central route are more enduring and less susceptible to influence. Inoculation theory aims to cultivate resilient and robust attitudes, and to enhance attitude strength, the element of threat plays a crucial role in motivating individuals to consciously engage with the inoculation message through the central route of processing (Lewandowsky et al, 2012).

Reputational Preemption

The inoculation message presents contradictory arguments and subsequently refutes them, while reputational preemption supplies individuals with specific information that can be employed later to safeguard and uphold their attitudes. During the period between the inoculation treatment and an actual attack on their beliefs, individuals are motivated to continually generate riposte and refutations as a means of preparation (Lewandowsky et al, 2012). The two components threat and reputational preemption work together first threat then reputational preemption. Threat acts as a source of motivation, while reputational preemption offers prepared responses or scripts. In the field of inoculation research, two variations of reputational preemption are recognized: passive and active refutations, which differ in the level of active involvement, required from the message recipients. The researchers hypothesized that passive refutations provide participants with specific content to defend their attitudes without overwhelming them cognitively. Consequently, inoculation research has predominantly focused on passive refutations, placing greater importance on the development of effective inoculation messages (Banas & Rains, 2010).

Inoculation Time

Time or duration is another important and significant element that can impact the inoculation progression. The existing body of literature presents inconsistent findings regarding the most effective timing gap between the delivery of the inoculation message and the subsequent persuasive attack. God bold & Pfau (2000) some researchers have observed more favorable outcomes when a persuasive attack follows the inoculation message after a 24-hour period, compared to an attack executed two weeks later. In contrast, another group of researchers has documented improved results when employing a two-week gap between the delivery of the inoculation message and the subsequent persuasive attack. Meta-analysis by Banas & Rains (2010) does not reported any obvious and clear-cut results on the most efficient time interval between the In the context of the inoculation message and the subsequent attack, these researchers discovered that the effectiveness of the inoculation remains consistent whether it is administered after two days or thirteen days. Nonetheless, their findings do indicate that the time interval between these two components should not surpass thirteen days.

Issue Involvement

The level of engagement an individual has with a particular topic, commonly known as "issue involvement," is another significant factor that influences the effectiveness of the inoculation process. Various research endeavors have delved into determining the ideal degree of issue involvement necessary to achieve effective behavioral inoculation. According to Menard et al. (2017), individuals who have a strong personal interest in the subject of the inoculation message are more likely to be motivated to actively engage with and process the message. As a result, behavioral inoculation is more effective in such cases. In contrast, a different study conducted by Pfau et al. (2003) revealed that individuals with a high level of involvement in an issue are less responsive to an inoculation treatment. Their heightened involvement implies that they are already attentive and prepared for confutation, rendering the threat component ineffective. Similarly, another study demonstrated that individuals with low involvement in a topic may not perceive the threat in the same manner, resulting in a lack of motivation to initiate the internal process of resistance (Compton & Pfau, 2004).

Valence of Prior Attitude

The effectiveness of behavioral inoculation is influenced by the valence (positive or negative) of the prior attitude. While this approach supports the theoretical basis of behavioral inoculation, it overlooks the real-world context where it may not always be feasible to customize messages according to an individual's prior attitude (Wood, et al, 2007). Hence, there has been a recent surge in curiosity about the impact of behavioral inoculation on individuals who hold a contrary stance to the viewpoint being promoted in the inoculation message. The findings of the research indicate that every participant, including those who initially had neutral or unfavorable opinions regarding the subject, displayed a minor shift towards a more positive view of agricultural biotechnology after the process of inoculation. Results of this research reported that all those with primarily impartial and negative view points relevant to the title. Going towards more positivity the research of Wood confirmed that the previously held attitudes influence the outcomes of behavioral inoculation (Wood, et al, 2007).

Life Skills

Life skills refer to the acquired practical abilities and positive qualities that empower individuals, particularly adolescents, to effectively navigate the various challenges and

complexities presented by their daily lives. These skills encompass a range of valuable competencies and attributes that enable individuals to approach life with confidence, resilience, and a problem-solving mindset (Wood et al, 2007). They equip people with the tools to manage obstacles, interact with others, make informed decisions, and maintain their overall well-being. In essence, life skills are essential tools that enable individuals to not only survive but also thrive in the face of the diverse and sometimes demanding situations that life presents (World Health Organization, 1997). Life Skills encompass a series of self-improvement processes and sequences that contribute to personal growth, enhancing an individual's capabilities and potential. They facilitate the development of human capital, improve employability, and elevate overall quality of life. Moreover, these skills empower individuals to better recognize and pursue their ideas, visions, and ambitions. World Health Organization (1998) has characterized "Adolescence" as the phase of life spanning from 10 to 19 years of age. The terms "children" and "adolescents" can be employed interchangeably to refer to individuals within this age range. During this developmental period, adolescents commonly grapple with a range of challenges, including conflicts with their parents, unpredictability in their behaviors, and shifts in their attitudes. When problems go unnoticed or unaddressed, people may experience a phenomenon called "role-dispersion." This can result in an imbalance between their abilities and needs, leaving them without a clear sense of direction (Berk, 2007). As a consequence, they might find themselves taking on sporadic and often emotionally driven tasks during their teenage years and into adulthood. This situation can lead to increased stress and difficulties in meeting societal expectations. To put it simply, "role-dispersion" occurs when individuals lack a clear understanding of their roles and responsibilities, causing confusion and inefficiency in managing their personal and social obligations. This tends to be most pronounced during the transition from adolescence to adulthood when people are expected to assume new roles and responsibilities. In essence, without a clear grasp of their roles, individuals can face challenges in handling their lives, leading to stress and struggles in meeting societal demands (World Health Organization, 1998; Berk, 2007).

The insecurities, feelings of depression, and ambition expectations of young people or adolescents contribute to their sense of instability, lack of self-confidence, and feelings of disappointment (World Health Organization, 1998). These emotions often stem from their inclination to confront and manage risks inherent to their developmental stage. However, the incorporation of life skills education can significantly alleviate these challenges by equipping

adolescents with the necessary tools to effectively navigate various sources of stress and other issues they regularly encounter in their lives (Berk, 2007).

In 1997, the World Health Organization introduced a periodic publication focused on life skills education for children and adolescents between the ages of 10 and 19, particularly within educational settings. Within this context, life skills were described as the means to enhance psychosocial competence, defined as an individual's ability to effectively cope with the challenges and issues encountered in their daily lives (Ryff, & Singer, 2008). Achieving a state of psychological well-being hinges on an individual's capacity to exhibit adaptability and maintain an optimistic outlook while engaging with the broader society and its cultural norms, as well as their immediate surroundings (Ryff & Keyes, 1995). To elaborate, it's crucial for individuals to possess the ability to adjust and thrive in various social situations and environments, all the while embracing a positive perspective. This combination of adaptability and optimism is fundamental for fostering a sense of comfort and mental equilibrium as one interacts with the complexities of societal dynamics and the cultural fabric that envelops them (Ryff, & Singer, 2008). Acquiring life skills is a crucial component of recovering from difficult challenges, including overcoming setbacks and achieving success. The World Health Organization has put forth a set of essential skills that encompass decision-making, interpersonal relationship abilities, self-awareness, empathy, emotional management, and coping with the challenges of depression and anxiety. These are the issues denoted by WHO inversely proportional the mentioned skills (World Health Organization, 1997). Building upon the fundamental abilities, life skills pertain to the proficiencies an individual aspires to possess in order to bolster and enhance their life. Evidence substantiates the effectiveness of diverse approaches in augmenting life skills, particularly evident in nations such as the USA and UK. In comparison to antiquated pedagogical methods, superior results have been attained through these approaches (Errecart et al., 1991). Building upon the inherent abilities we all have, life skills encompass a broad spectrum of proficiencies that individuals seek to develop in order to fortify and improve their lives. These abilities transcend the realm of basic knowledge and competencies, encompassing a more expansive array of talents that enable individuals to better address the intricacies and difficulties encountered in life. Among these diverse capabilities are problem-solving, decision-making, effective communication, interpersonal aptitude, critical thinking, empathy, resilience, and adaptability, among various others (Perry & Kelder, 1992).

Psychological Correlates of life skills

Depression, Anxiety and Stress

Adolescents find themselves in a complex and uncertain stage of life, positioned between childhood and adulthood. This age group, spanning from 14 to 24 years old, accounts for roughly one-fifth of the global population. Remarkably, a significant majority, approximately 80 to 85%, of these adolescents reside in the world's least economically developed and developing nations. (Hanon et al, 2013). To provide further insight, adolescence represents a pivotal transitional period marked by physical, emotional, and social transformations. It's a phase during which young individuals grapple with the intricacies of maturation, the formation of their identities, and the preparations for adulthood (Carter, 2004). Regrettably, a substantial portion of these adolescents live in regions with limited resources and opportunities, intensifying the challenges they face on their journey to adulthood (Carter, 2004).

Recognizing and addressing the distinct needs and obstacles of this demographic is indispensable for their well-being and the progress of these societies. During adolescence, a period characterized by exuberance and enjoyment, there is a potential for these emotions to evolve into feelings of compassion and profound enthusiasm (Spencer, 2005). However, it is important to note that adolescence is also a phase riddled with challenges, such as stress, discontent, anxiety, and aggression, which often coexist with these positive emotions (Carter, 2004). During adolescence, social interactions often become restricted, exposing young individuals to sensations of stress, unease, and melancholy. These emotional trials subsequently obstruct their capacity to foster favorable bonds, especially within their familial and peer circles. Consequently, their overall effectiveness becomes constrained, hampering the cultivation of resilience and a robust character. Furthermore, these challenges act as barriers, inhibiting their psychological and emotional maturation (Carter, 2004). Research unequivocally establishes a substantial correlation between the emotional tribulations faced by adolescents—such as stress, anxiety, and despondency—and their engagement with the broader society, along with their interpersonal relationships. These struggles also cast a shadow over their academic accomplishments, influencing their performance within educational environments. This intricate nexus of interrelations underscores the pivotal role played by social

interactions and emotional well-being in the comprehensive development of adolescents (Ryff & Keyes, 1995; WHO, 1995).

Reports indicate that stress, anxiety, and depression are prevalent in a range of 30 to 75 percent among pre-adolescent children and approximately 25 to 50 percent in adolescents and young individuals (Christie et al., 2014). Roughly 10-20% of school-age children exhibit indicators of social withdrawal, anxiety, stress, isolation, heightened empathy, and unhappiness. The World Health Organization (WHO) has also projected that by the year 2020, stress and depression would become significant contributors to disability, particularly among young individuals. Numerous reports have indicated that nearly 9% of adolescents or young people will encounter a period of depression or anxiety at some point in their lives, with the possibility of experiencing these challenges later in life as well (Noble & McGrath, 2005). To clarify, a substantial portion of school-going kids grapple with emotional and social issues like withdrawal and anxiety. According to the WHO, stress and depression were anticipated to become prominent factors affecting the well-being of young people by 2020. Various reports have highlighted that nearly 9% of adolescents may experience episodes of depression or anxiety during their youth, and these challenges might also emerge in their later years (WHO, 1998; Christie et al., 2014).

Social and Emotional Competence:

Social and Emotional Competence (SEC) is a multifaceted domain encompassing a wide array of social and emotional skills and behaviors (Saarni et al., 2006; Semrud-Clikeman, 2007). The development of social and emotional competence is a crucial and well-intentioned objective for the growth of young people and adolescents, as it has been linked to both short-term and long-term positive outcomes (Eisenberg, Spinrad, & Knafo-Noam, 2015). In the pursuit of appropriate literature, a systematic approach was employed to highlight the facets of social and emotional competence, such as identifying and categorizing a comprehensive set of skills, clear objectives, and behaviors that are recognized as indicators of social and emotional proficiency (Rose, 1997). SEC is established through the satisfaction of fundamental psychosomatic needs, self-motivation that is both socially and emotionally autonomous, and attitudes that reflect social and emotional competence.

Essentially, there are underlying psychosomatic prerequisites that must be met. Observable self-sufficiency reflects the feeling of initiating one's actions and connecting those actions with genuine needs. Competence mirrors the rationale of actively engaging in one's actions and effectively utilizing individual abilities. Relatedness embodies the understanding of forming connections with others (Baumeister & Leary, 1995). The SEC School Model proposes that fulfilling fundamental psychological needs fosters self-motivated social and emotional inspiration, which in turn enhances competencies and skillful achievements. These adept social and emotional accomplishments then support the ongoing cycle of fulfilling psychological needs.

Problem Statement

Behavioral inoculation is a theoretical concept aims to safeguard individuals from unwanted and persuasive messages that may leads them to emotional or psychological issues. Behavioral inoculation is type of psychological strategy which is utilized for human mental preparation and strength. There is limited research in this area. Individuals are using or utilizing these persuasive messages and communication, which in turns influence their behavior and overall belief system. These persuasive messages have a profound negative impact upon individuals' well-being, decision making and overall mental health. These are the persuasive messages and stimulations responsible for the manipulation of individual's beliefs, attitude and behavior to become involved in harmful and unwanted behaviors. Misinformation, miscommunication and misinterpretations are related issues having severe public health consequences.

On the basis of earlier research work and address this issue the current research was carried out. Behavioral inoculation proposes important research objectives to provide solution of the mentioned issues. The main aim is how we can protect individuals from the negative effects of these unwanted messages and how we can make individuals emotionally stronger and safer, however the problem still exists and need to be studied from different angles. Behavioral inoculation determines the effectiveness of this theory and identifies the factors that can influence its success in different circumstances.

Significance of the Study

The present study aims to introduce importance of behavioral inoculation techniques among adolescent. Adolescence is a transition period that bridges childhood and adulthood during which major physical cognitive and psychological changes occur and these forces may influence the development of the adolescent. During this period young people start to spend more time with peers and conforming to the ideas and judgments of their peers. This transition is so crucial that adolescents may face problems in certain areas of life such as parent child conflict substance abuse and risky behaviors. If these issues are not addressed properly these individuals may suffer a negative identity which results in unprepared for the psychological challenges of adulthood.

These internal stresses and social expectations lead to moments of uncertainty and self -doubts in the adolescent. Therefore, in such situations the young person takes risks and involves in risk taking behaviors. Hence the enhancement of psychosocial competencies through life skills training is the need of the hour for adolescents and healthy transition to adulthood and independent functioning. This process is named as behavior inoculation in this study. Behavioral inoculation will focus on skills necessary to perform tasks for a given age and gender in the different areas of human development (i.e. psychological, physical, vocational, cognitive, moral, ego and emotional).

The study will also help to understand persuasion. How an individual will be persuaded and how they resist persuasion. The study will help in developing resistance to harmful behaviors like smokers, drug abusers and risky sexual behaviors. Enhancing individuals critical thinking is another important factor, the study will suggest and report. This can also help people become more discerning consumers of information and less vulnerable to manipulation. The study will make adolescents to prepare and implement the application in real world settings. Behavioral inoculation research has an applied practical application in real life scenarios including public health campaigns, marketing, purchasing and political relevant messaging.

The mental health professionals can use these practices while dealing different clients. By understanding these inoculation principals, the mental health or

communication experts can design more effective and influential messages which can make the individual less vulnerable towards counter-persuasion. Overall, this study of behavior inoculation is important and more applied to help researchers and the community to understand persuasion, develop resistance to unwanted harmful behaviors, enhance the ability of critical thinking and also develop and utilize more useful communication strategies.

Rationale of the study

The investigation pertaining behavioral inoculation among adolescent. Adolescence is a transition period that bridges childhood and adulthood during which major physical cognitive and psychological changes occur and these forces may influence the development of the adolescent. During this period young people start to spend more time with peers and conforming to the ideas and judgments of their peers. This transition is so crucial that adolescents may face problems in certain areas of life such as parent child conflict substance abuse and risky behaviors. If these issues are not addressed properly these individuals may suffer a negative identity which results in unprepared for the psychological challenges of adulthood.

These internal stresses and social expectations lead to moments of uncertainty and self -doubts in the adolescent. Therefore in such situations the young person takes risks and involves in risk taking behaviors. Hence, comprehending the variables that contribute to psycho social competencies through life skills training and its resultant effects is crucial in fostering favorable growth in adolescent's behavior. This process is named as behavior inoculation in this study. Behavioral inoculations are focused on skills necessary to perform tasks for a given age and gender in the different areas of human development (i.e. psychological, physical, vocational, cognitive, moral, ego and emotional).

The main objective of the current study is to find out the impact of behavioral inoculation among adolescents. The practice of behavioral inoculation is favorable such is psychological, vocational cognitive performance improvement. The impact of behavioral inoculation can offer valuable insights into how individuals can modify their behavior through life skills practices, as well as how life skills can serve as a means to augment cognitive, social and psychological.

In summary, the study on impact of behavioral inoculation is a psychological factor in adolescents is important for understanding the factors that contribute to modification and its positive outcomes. The study's findings can have implications for interventions aimed at promoting positive outcomes in adolescents and can aid literature on the relationship of impact of behavioral inoculation to various psychological factors in adolescence.

Hypotheses

1. The life skills scale is expected to exhibit vigorous reliability and validity, affirming its appropriateness for assessing different personality traits in adolescents.
2. A positive correlation is predicted between the life skills scale and social-emotional competence, coupled with negative association with the depression anxiety and stress scale.
3. Participants exposed to the community-based psycho-social approach with behavioral inoculation will demonstrate more favorable attitudes than those without supplementary information.
4. The group receiving the inoculation message is expected to exhibit higher levels of certainty in their attitudes compared to the group without additional information as well as maintain more positive attitudes.
5. The post-intervention group is expected to exhibit increased life satisfaction and decreased psychological distress compared to the pre-intervention group, reflecting the impact of the community-based psychosocial approach on adolescents.

Delimitation of the Study

The delimitation of a study on behavioral inoculation would depend on the specific research questions and goals of the study. However, some possible delimitations of such a study could include.

1st this research study was limited to adolescents' college going sample only, belong to Khyber Pakhtunkhwa province only.

2nd this research was limited to specific inoculation message/training of life skills only.

3rd this research study was limited to depression, anxiety and stress as outcome variables.

4th this research was also limited to comparison pre and post control and experimental group.

LITERATURE REVIEW

Chapter 2

This section of research is composed the earlier research work related to the area of current research study. Actually, these studies are reviewed to make foundation of the current research work. Gap between the knowledge is searched out. New and advance citation helps the researcher to make a good connection between previous and the current research work.

Behavioral Inoculation

The word inoculation is borrowed from medical science, where it is prevalent for vaccination etc. here behavioral inoculation is a communication strategy that aims to

protect individuals from persuasive messages that may influence their attitudes, beliefs, or behaviors in undesirable ways. It is a technique or strategy used in both fields of Psychology, Business and communication to build coping, resilience and decrease vulnerability against unattractive, persuasion and manipulation attempts (Miller, 1979). The strategy involves exposing individuals to weakened, debilitated or diluted versions of persuasive messages, followed by surrejoinder that help them build resistance to more potent persuasive attempts. This approach is based on the idea that if individuals can withstand weak persuasive messages, they will be better equipped to resist stronger persuasive messages in the future. The theoretical foundation of behavioral inoculation can be traced back to the work of McGuire (1964), who proposed that resistance to persuasive messages could be enhanced by exposing individuals to negation before they encounter the persuasive message. There is a considerable number of research studies that support the effectiveness of behavioral inoculation in the field of Psychology and Psychotherapy. McGuire's Inoculation Theory was developed to address the challenge of persuading individuals not to succumb to the influence of others.

This theory serves as a strategic model for cultivating resistance to persuasion by exposing individuals to arguments that challenge their existing beliefs and equipping them with counterarguments to effectively defend against these challenges (Compton, 2013). In today's information-saturated world, we are constantly bombarded with persuasive attempts from various sources, necessitating a means of effectively combating such efforts. In this context, Inoculation Theory provides a valuable approach for individuals to strengthen their resistance to persuasion and defend their beliefs through strategic communication tactics (McGuire, 1964; Compton, Jackson, & Dimmock, 2016).

Inoculation or inoculation theory is a social psychological communication theory that shows resistance to challenges to approaches, beliefs and opinions can be brought much like confrontation to biological challenges to health. In order to inoculate against future challenges, an enfeebled dose for forthcoming challenge is ordered in advance to confront with stronger challenge, in order to proactively make defending responses (Compton, 2013). While on the other hand and somehow, attitudinal inoculation is even more potent, more effectual and has

more dominant effects than a viral inoculation. In case of conventional dose inoculation, it defends or protects only one threat. For example, a flu dose/shot defends against only the flu and a specific strain or strains of the flu. While in case of an attitudinal inoculation, there are no such limitations. Usually Inoculating against certain challenges deliberates resistance to challenges (Banas & Rains, 2010; Compton, 2013; McGuire, 1964). Many research studies are supporting and backing up the inoculation's effectiveness & efficiency especially in the perspectives of politics (Compton & Ivanov, 2013) and health related issues (Compton, Jackson, & Dimmock, 2016).

This approach was based on the analogy of medical inoculation, where individuals are exposed to a weakened version of a virus to build immunity to a stronger version of the virus. Since McGuire's work, many studies have examined the effectiveness of behavioral inoculation in various domains, such as health behavior, political persuasion, and consumer behavior. For example, in a study by Compton and Pfau (2005), participants who were exposed to weak pro-smoking messages followed by disapproval were less likely to report positive attitudes toward smoking compared to participants who were only exposed to weak pro-smoking messages. The most important point of inoculation is that an attitudinal inoculation works comparable with a medical inoculation. Pre-exposure to a weak form of a challenge deliberates resistance to a stronger form of challenges that come later (Compton, 2013; McGuire, 1964). There are two key constituents which are thought to be in action in inoculation. One is threat or recognition that the current position is susceptible to future attacks (Banas & Richards, 2017; Compton, 2013; McGuire, 1964).

Another one is reputational preemption or refuting of disproof or counter reply refutation which contains specific content that receivers can employ to fortify attitudes against consequent challenges, which generates additional rising and refuting of disagreement in the thoughts of those who are inoculated and in their actual conversations with others about those challenges (Compton & Pfau, 2009; Dillingham & Ivanov, 2016; Ivanov et al., 2012). Inoculation messaging has many results and one of the powerful results is that the resistance is consulted that ranges well beyond the specific confutation encompassed in the treatment message. As an alternative, inoculation messaging convenes fortification to both the same and to different occurrences (Banas & Rains, 2010), or objection that were explicitly raised and countered in the treatment message and other cavil that were not even stated.

The conventional inoculation message is a two-sided message that raises and refutes challenges to a supported attitude or belief. For example, an inoculation message aimed to guard children from direct or indirect influence of peers or members of social group's like to try vaping. Among these members or some your friends might attempt to persuade you that vaping is harmless and it has no negative effects on the health. But actually, it is not correct as vaping consist of inhalation & swallow of injurious substances. It may also cause death of people in case of severity. "Vaping is harmless" is a rebuttal and it is working like the viral part of a vaccination which is something that activates a response of protection and safety. It is weakened by the lines that follow the refutation of this protest. Thus, this two-sided message setup purposes as inoculation which is presenting weakened, potentially dangerous content to generate a resistance response to safeguard against stronger dangerous content later. This approach could be practiced to any problem, in any perspective, that has the potential to be challenged. In two-sided message format of inoculation, messages often comprise of forewarning or an advance warning. A forewarning is a proclamation that gives warnings to message receivers about an attitude or belief that they are presently holding will probably be challenged in the future (Compton, 2013; McGuire, 1964).As in example of vaping, a forewarning announcement could foreword the two-sided message content and warns that you are determined to evade vaping as it is a correct choice and might have consequences. But actually, you will confront with challenges in your decision, may be from your peers or social members, family members, from the media, or some other influential effort. Forewarnings and advance actions like this may enhance responses to an inoculation message. They may stimulate to more threat, and this threat provokes the process of resistance to impact (Banas & Richards, 2017; Compton, 2013).

Another example comes from a study by Pfau and Van Bockern (1994), which examined the effectiveness of behavioral inoculation in reducing susceptibility to negative political attack ads. The study found that participants who were exposed to weak versions of negative attack ads followed by complaint were less likely to be influenced by the stronger negative attack ads compared to participants who were not exposed to the weak messages. Overall, the research on behavioral inoculation suggests that this strategy can be an effective tool for building resistance to persuasive messages. By exposing individuals to weakened versions of persuasive

messages and providing them with criticism, behavioral inoculation can help individuals build immunity to stronger persuasive attempts in the future. Easley et al. (1995) initiated that inoculation is an efficacious and productive approach to protect against negative information. The initiations and results recommended that an someone's most efficient strategy is to self-disclose with refutations of the same information that is likely to be used in consequent attacks; however, if an attack is not predicted or otherwise only a weak attack is expected, then self-disclosure may not be valuable. These effects could be disadvantageous and injuries. Accordingly identifying the requirement for extra study, reputational-same approaches, under expectation of a strong attack, appear most reasonable. This idea that "inoculation harms beliefs" has since been questioned by some findings in different studies (Wigley & Pfau, 2010), but not in all findings (Wan & Pfau, 2004). Wan and Pfau (2004) originated that inoculation functioned to hold up public attitudes during a crisis but no better than a bolstering approach, and they established some proofs that inoculation can hurt attitudes if a crisis does not actually occur. However, Wigley and Pfau (2010) originated also slight risk of using an inoculation message in the nonexistence of an actual crisis. Inoculating against a risk that did not emerge did not damage someone's image.

Wigley and Pfau (2010) observed at a particular use of inoculation in public relations: pre-crisis communication. "As it is difficult to antedate and pretend each probable crisis situation an organization might meet". Such organizations required exploring numerous proactive communication approaches in order to anticipated reputational damage in the occurrence of a crisis" with specific consideration to inoculation, reinforcing, and corporate social responsibility messages. It has been revealed by investigating a pet food company crisis that inoculation is an effective pre-crisis strategy but no more like boosting strategies. A risk has been also investigated during using inoculation messages even if a crisis does not really occur; certainly, inoculation messages even seem to improve a company's reputation to some extent" when a crisis does not actually occur. It has been initiated that inoculation messages had an outcome on those without positive attitudes or empathy with a company under attack but did not support those who already had positive attitudes or identified with a company (Wan & Pfau, 2004). The identification they previously had with the company appeared to be adequate to deliberate resistance. These outcomes could be realized as challenging because of some basic assumptions of inoculation or they could be realized as a healing form of inoculation: inoculation messaging toward those who do not have the "right" position already

in place, but as an alternative, toward those who disagree with the supported position of the inoculators (Einwiller and Johar, 2013). Drawing parallels with the concept of vaccination, Inoculation Theory shares a fundamental resemblance. Much like how a vaccine introduces a weakened form of a virus to bolster immunity against the disease, Inoculation Theory employs a similar approach to "inoculate" individuals against challenges to their beliefs (Wan & Pfau, 2004). According to this theory, individuals are exposed to a milder version of a contrasting argument known as the inoculation message. This exposure prompts the development of a defense mechanism within these individuals, enabling them to steadfastly maintain their beliefs without succumbing to attitude change when confronted with a more potent form of the opposing argument. Research findings have corroborated the efficacy of this inoculation process, highlighting its superiority over simply reinforcing original beliefs with stronger evidence (Wan & Pfau, 2004).

Types of Behavioral Inoculation

Behavioral inoculation is mainly having two divisions including cognitive and behavioral divisions. The cognitive division of behavioral inoculation involves preparing individuals to resist persuasive messages by enhancing their cognitive processes. This division involves helping individuals develop critical thinking skills, increasing their knowledge and understanding of the topic at hand, and teaching them how to identify and analyze persuasive messages. The cognitive division of behavioral inoculation is based on the idea that individuals who are better equipped to critically analyze persuasive messages are more likely to resist them (Pfau et al, 2009; O'Keefe, 2016).

The behavioral division of behavioral inoculation involves preparing individuals to resist persuasive messages by enhancing their behavioral responses. This division involves helping individuals develop the necessary skills and strategies to resist persuasive messages in real-life situations. The behavioral division of behavioral inoculation is based on the idea that individuals who are better equipped to resist persuasive messages are more likely to do so in real-life situations. The mentioned two divisions of behavioral inoculations are working collectively to prepare an

individual to resist persuasive messages (Pfau & Wan, 2015; Compton & Pfau, 2005). Enhancement of both the divisions the individual can better cope the situations and maintain their belief and behavior without change. Furthermore, behavioral inoculation is divided into the following types.

Forewarning:

This involves alerting individuals in advance to the persuasive intent of a message. This can help individuals to activate their critical thinking skills and to develop opposing reason (McGuire, 1964). It is a type of behavioral inoculation that involves alerting individuals in advance to persuasive intent of a message. It leads an individual to enhance their ability and skills related to critical thinking to develop the capability of kick. Another research paper by McGuire reported various methods and techniques for the induction of persuasion also including forewarning. According to him forewarning is effective while helping someone to resist persuasive actions by activating their defenses earlier in advance (Miller, 1979). Another research study by Van Der Linden and colleagues (2017) reported that use of this type of inoculation is used to inoculate the general public against misinformation or miscommunication regarding climate change etc. According to them forewarning can become more effective and powerful when used concomitant with other inoculation techniques or strategies like refutation or repetition.

One-sided vs. Two-sided Messages

This type of inoculation involves presenting individuals with either a one-sided message that only presents one perspective or a two-sided message that presents both sides of an argument. Research suggests that two-sided messages can be more effective in helping individuals to resist persuasion. Two sided messages communicate easily and having a strong persuasive effect (Petty & Cacioppo, 1986). Another study by Pfau and colleagues (1993) reported the influence of one-sided or two-sided communication strategy in an antismoking educational program. Results of this study suggested that two-sided messaging strategy was more effective as compare to one-sided message in changing attitudes and behaviors in highly educated smokers.

Another research study reported the effects of resisting persuasion on attitude certainty. According to them when an individual is exposed to double sided (two-sided) message and an opportunity is provided to resist persuasion. Attitude of the said individual become more certain then when they are exposed to one-sided message or two-sided without opportunity of resisting persuasion (Tormala & Petty, 2002). Hart and colleagues used the same strategies of inoculation in climate change communication, results suggests that one-sided messages that only present the potential risks of climate change may be less effective than two-sided messages that also present potential solutions or techniques of mitigation (Hart et al, 2012).

1.1.1. Distraction

This type of behavioral inoculation works on the distraction of individuals from the persuasive message, like a professional giving them a goal or task to complete while at the same time they are exposed to message. This can reduce the effectiveness of the message by preventing individuals from full processing (Petty & Wegener, 1999). It refers to the act of diverting someone attention or focus from something that is currently happening or being worked on. It can be in the form of external stimuli like noise or some visual stimulus or it be internal like thoughts or in the form of emotions. Distraction has both positive and negative influences. In some cases, distractions help individual in relaxation and to recharge for the remaining work. It is in form of mental break in a challenging task (Rosen et al, 2014; Rosen, Carrier & Cheever, 2013). While in some cases excessive distraction may deteriorate the whole scenario, which in turn decreases productivity and performance due to consistent delay in work. Different types of distractions are common in daily life and can take many different forms in different walk of life. Some common external distractions include social media notifications, phone calls, background noise, and interruptions from colleagues or family members. Internal distractions can include worries, anxiety, daydreaming, and self-doubt (Campbell & Park, 2018; Sana, Weston & Cepeda, 2013).

Reducing distractions can be challenging for all professional as well as clients, but there are several beneficial strategies that can be helpful and productive. Some of these include creating a distraction-free environment, such as by using noise-

cancelling headphones or working in a quiet room, setting specific times for checking emails and social media, and using time-management techniques to prioritize tasks and avoid procrastination (Mann & Cowburn, 2017). In addition to affecting productivity and performance, distraction can also have an impact on mental health. Chronic distraction can contribute to stress, anxiety, and feelings of overwhelm. As such, developing strategies to reduce distractions can be an important part of maintaining both mental and physical well-being (Medeiros & De-Nadai, 2018).

Active Participation

Active Participation is a type of behavioral inoculation involves encouraging individuals to actively engage with the communication and message or argument, for example, by asking them to generate beef, asking questions or to imagine themselves in a particular scenario. This can help to build up their defenses against persuasion (Compton & Pfau, 2004). Active involvement in the class is another example, where the participants can save their self from over thinking etc. Active participation refers to the act of engaging actively in a particular activity or process. It involves taking an active role in something, contributing to it, and being fully present and engaged in the experience (Boud, Cohen & Sampson, 2014).

Active participation can take many forms, such as participating in a discussion, volunteering for a cause, joining a group or community, attending events or meetings, or actively listening and responding to feedback. It requires a level of engagement and involvement beyond just observing or passively consuming information. Active participation can have many benefits, including increased learning, improved communication and collaboration skills, increased confidence and self-esteem, and a greater sense of connection and belonging. It can also lead to personal growth and development, as well as a sense of purpose and fulfillment (Johnson & Johnson, 2014; Kuh, 2003).

Role-Playing

This involves asking individuals to role-play as either a persuader or a resister in a hypothetical scenario. This can help individuals to develop empathy and understanding for both sides of an argument either positive or negative, and to

develop strategies for resisting persuasion (Moyer-Gusé & Nabi, 2010). Role-playing is a form of interactive storytelling or acting actively in which participants assume the roles of characters and act out situations within a predetermined setting or scenario. It is commonly used in games, such as tabletop role-playing games like Dungeons and Dragons, as well as in improvisational theater and other forms of entertainment (Kim & Lee, 2019; Bates & North, 2019).

In role-playing games, players create characters with unique personalities, abilities, and backgrounds, and then engage in adventures and challenges within the game world. The game master or dungeon master serves as the storyteller and guide, presenting challenges and obstacles for the players to overcome (Lawrence, 2017). In improvisational theater, role-playing involves creating characters on the spot and acting out scenes based on audience suggestions or pre-determined prompts. The focus is on collaborative storytelling and creating compelling characters and narratives. Role-playing can also be used as a tool for personal growth and development, such as in therapy or coaching settings. By assuming different roles and perspectives, participants can explore different aspects of them and gain insights into their own behaviors and motivations (Brown, 2018).

The Process of Behavioral Inoculation

Behavioral inoculation is a process that helps individuals resist persuasion and unwanted influence by exposing them to weakened versions of persuasive arguments. The process needs a well-qualified mental health or communication expert to perform the process. There are some other re-requisites of behavioral inoculation process like preparation of training room, client requirements, availability of light, water and training materials etc. Dillingham and Ivanov (2017) prolonged inoculation into the dominion of investing. They initiated that loss framing was a more operative strategy than gain framing in defending “stay in the market (SIM)” views of untested investors during monetary crunches and that inoculation mechanisms well as a pre-crisis strategy than a supportive message in protecting SIM theories of inexperienced investors during financial crises. Wigley and Pfau (2010) didn’t discover any signs of negative effects of using an inoculation treatment if a crisis did not really occur. Mikolon, Quaiser, and Wieseke (2015) also found in their field experiment that an inoculation strategy can contest customer discontent when it is employed erstwhile to a service

failure of a corporation. If a facility failure actually didn't occur, inoculation did not look to cause harm, which is dependable on the findings of (Wigley & Pfau, 2010; Dillingham & Ivanov (2017). Haigh & Wigley (2015) studied that whether a company could defend its reputation against negative user engendered comments posted to Facebook via inoculation. The scholars revealed that subsequent acquaintance to negative Facebook posts, stakeholders' opinions of the organization, public association, corporate social responsibility and reputation were considerably less positive.

The practice of inoculation messaging, nevertheless, or calling into question the trustworthiness of those posting negative comments and threatening stakeholders their attitudes could be endangered, showed that it might be likely to defend stakeholder attitudes against negative, user-generated outbreaks. The research also found that members exposed to an inoculation message felt somewhat more positive after overriding negative, user-generated content. These outcomes backing previous study that also found stakeholders' attitudes could be protected against forthcoming attacks (Wan & Pfau, 2004; Wigley & Pfau, 2010). This process involves several key steps:

Identify the Attitude or Behavior to be Inoculated

The first step in the process of behavioral inoculation is to identify the attitude or behavior that is to be protected from persuasion or to be inoculated. For example, if the goal is to prevent individuals from smoking, the attitude or behavior to be inoculated would be anti-smoking behavior of the client. To identify the attitude or behavior to be inoculated, you need to determine the specific attitude or behavior you want to protect against potential influence or change. This could be any behavior or belief that you consider essential to your values or goals (Rothschild, 1999; Stiff & Mongeau, 2003). For example, if you are a teacher who wants to inoculate your students against peer pressure to use drugs, the attitude or behavior to be inoculated would be a refusal to use drugs, and a belief that using drugs is harmful and should be avoided. Similarly, if you are a marketer who wants to inoculate your customers against negative reviews, the attitude or behavior to be inoculated would be a positive perception of your product, based on the features and benefits it provides.

Identify the Persuasive Arguments

The next step is to identify the persuasive arguments that are likely to be used to influence the targeted attitude or behavior. This can be done through research and analysis of previous persuasive attempts, as well as through the examination of social norms and media messages (Heath & Heath, 2007). Identifying persuasive arguments requires careful evaluation of the evidence, reasoning, and appeals used in the argument. Here are some common characteristics to look for when analyzing persuasive arguments (Ariely, 2009).

Evidence

Persuasive arguments often rely on factual information to support their claims. The evidence should be credible, relevant, and sufficient to prove the point being made. In persuasive arguments, evidence is critical to support the claims being made and convince the audience of the validity of the argument. Evidence refers to any information that supports or proves a statement or claim, such as statistics, facts, examples, expert opinions, or research findings (Heath & Heath, 2007).

To make a persuasive argument, you need to provide strong evidence that supports your claims. The evidence should be relevant, reliable, and convincing to your audience (Tindale, 2017). Relevant evidence is directly related to the point you are making and supports your argument. For example, if you are arguing that smoking is harmful to health, you might present statistics on the number of deaths related to smoking or share medical research findings about the effects of smoking on the body (Zarefsky, 2014). Reliable evidence comes from trustworthy sources and is backed up by research or facts. For instance, if you are presenting an argument about climate change, you might cite reports from reputable scientific organizations or climate experts.

Reasoning

Persuasive arguments use logical reasoning to connect the evidence to the conclusion. The reasoning should be clear, coherent, and free from fallacies. Reasoning is an essential component of persuasive arguments. It involves using logical principles to support your claims and convince your audience to accept your position. Effective reasoning involves using evidence, identifying and addressing

potential exception, and making connections between ideas. There are several types of reasoning that can be used in persuasive arguments. Some of them is common including deductive reasoning in which we are drawing a specific conclusion from a general principle or premise. For example, if the premise is that all dogs are mammals and the evidence supports that a specific animal is a dog, then the conclusion is that the animal is a mammal while in inductive reasoning we are drawing a general conclusion from specific examples. For example, if you observe several dogs and find that they all bark, then you may conclude that all dogs bark (Mizrahi, & Dickinson, 2022).

Analogical reasoning is another type which involves using a comparison between two things to make an argument. For example, if you want to argue that a particular policy is a bad idea, you might compare it to a similar policy that has failed in the past. In Causal reasoning we are establishing a cause-and-effect relationship between two things. For example, if you want to argue that smoking causes lung cancer, you would present evidence linking the two. In emotional reasoning involves appealing to the emotions of your audience to persuade them. For example, you might use vivid language to describe the negative consequences of a particular policy to make your audience feel more strongly about it (Marten & Dahlen, 2005; David, Matu & Macavei, 2018).

It's important to keep in mind that reasoning is an important part of persuasive arguments; it's not the only component. Effective persuasion also involves using rhetorical strategies like appeals to authority, appeals to ethics, and appeals to the audience's self-interest. Additionally, effective persuasive arguments should be supported by credible evidence and presented in a clear and compelling way.

Appeals

Persuasive arguments often use emotional appeals to connect with the audience and motivate them to take action. Common emotional appeals include fear, pity, anger, and happiness. An appeal is a rhetorical strategy used in persuasive arguments to convince an audience to adopt a particular point of view or take a particular action. There are several types of appeals that can be used in persuasive arguments, including ethos also known as an appeal to ethics or credibility. Pathos

also known as an appeal to emotion. Logos, an appeal to logic or reason. Kairos also known is an appeal to timing or the sense of urgency. Authority an appeal to authority involves referring to an expert or someone with more experience and knowledge in a particular field to support one's argument and consensus also known as an appeal to consensus involves referencing a common belief or agreement among a group of people to support an argument (Thaler & Sunstein, 2008).

1.1.1.1. Counterarguments

Persuasive arguments acknowledge and address challenge. This shows that the author has considered opposing viewpoints and is confident in their position. A protest is an argument presented against the main argument of an opposing side. It is an opposing view that challenges the original argument's validity or logic. A demurral is used to show the weaknesses or flaws in an argument and to provide a balanced perspective. When presenting a opposing reason, it is important to acknowledge and address the opposing side's main point (Walton, 2006). This can help to establish credibility and show that you have considered other viewpoints. Additionally, it is important to use evidence and examples to support your counterargument and show why it is a valid point. By presenting counterarguments, one can strengthen their own argument by anticipating and addressing potential criticisms or objections. It also helps to engage in a constructive dialogue and foster an environment of open-mindedness and critical thinking (Hitchcock, 2014)

Tone

Persuasive arguments often use a confident and assertive tone to convey the author's expertise and authority on the topic. Tone plays a crucial role in persuasive arguments. The way an argument is presented can greatly impact how the audience receives and interprets the message. A persuasive tone should be confident, assertive, and clear. The language used should be strong and convincing, but not aggressive or confrontational (Votta, 2021; Mertan & Toksoy, 2021). The goal is to persuade the audience to accept a particular point of view, but not at the expense of alienating them. It is also important to consider the tone of the audience and tailor the persuasive arguments accordingly. For example, a persuasive argument that is directed towards a more formal and professional audience may require a more serious and formal tone, while a persuasive argument that is directed towards a younger

audience may require a more casual and relatable tone. Additionally, it is essential to avoid fallacious reasoning, which can undermine the credibility of the argument. A persuasive argument should be based on sound evidence, logic, and reasoning (Lai, 2021). The tone should also be respectful and empathetic towards opposing views, acknowledging their validity while presenting a stronger argument for the preferred viewpoint.

Create Weakened Versions of the Arguments

Once the persuasive arguments have been identified, the next step is to create weakened versions of those arguments. This can involve altering the language or tone of the arguments, or reducing the strength of the evidence used to support them. Weakened versions of arguments can be made on the basis of knowledge relevant to the said phenomenon. For example, here are the examples of both strong and weakened versions of arguments related to climate change.

Strong argument: "Climate change is real and caused by human activity, and we need to take immediate action to address it before it's too late." Weakened version: "Climate change may or may not be real, and even if it is, it might not be caused by human activity. We can take action to address it eventually, but it's not urgent"(Groarke, 2005).

Deliver the Weakened Arguments

After creating the weakened arguments, they should be delivered to the individuals who are to be inoculated. This can be done through various means such as through written or spoken messages, advertisements, or social media. It is a type of choice made, which states that the assumption is completely wrong; it will lead to a weaker argumentation. Likewise in case of evidence. If different forms of evidence may strengthen the argument, same as that different types of evidence can weaken the arguments also. Any new information given or presented in an answer choice or multiple choice that makes the assumption less likely to be correct will weaken the argument as a whole (Tindali, 2007). The choices in strengthen and weaken questions will always strengthen the argument, weaken the argument, or not affect the argument.

Provide Counterarguments

Along with delivering the weakened arguments, it is important to provide objection that challenge the validity of the persuasive arguments. This can help individuals build up their resistance to future attempts at persuasion. It involves acknowledgement of standpoints that goes against your arguments which confirms your arguments. This is typically taking place by asserting the opposing side's argument, and then ultimately presenting your argument as the most logical solution (Hitchcock, 2014).

Repeat the Process

Behavioral inoculation is not a one-time event but rather a process that should be repeated over time. By exposing individuals to weakened versions of persuasive arguments and providing exception, individuals can build up their resistance to persuasion and develop stronger attitudes and behaviors (Hitchcock, 2014; Groarke, 2005; Cialdini, 2002). Overall, the process of behavioral inoculation involves identifying the attitude or behavior to be protected, identifying persuasive arguments, creating weakened versions of those arguments, delivering the weakened arguments, providing beef, and repeating the process over time. The process of persuasive argumentation can be repeated by following these steps:

- i. Identify your audience: Before beginning your argument, it is crucial to consider your intended audience. Different individuals or groups may hold distinct beliefs, values, and attitudes, and thus, it is essential to customize your argument in a way that resonates with them. This means tailoring your approach to effectively appeal to their specific perspective (Cialdini, 2002).
- ii. State your position: Clearly state your position on the issue you're addressing. Make sure your audience knows where you stand from the outset.
- iii. Provide evidence: To bolster your stance, provide compelling evidence that could take various forms, such as statistics, research findings, expert perspectives, or personal experiences. You can further refine and adjust your argument by rephrasing and rewording your supporting evidence.
- iv. Address denial: By acknowledging and addressing potential counter reply, you demonstrate that you have taken into account different perspectives and have strengthened your argument by showing its superiority. This approach

indicates that you have engaged in critical thinking and are willing to consider alternative viewpoints, which can increase the credibility of your argument. It also shows that you are aware of potential objections and are prepared to address them, which can further bolster the persuasiveness of your argument. Therefore, it is important to anticipate and respond to potential counterarguments in order to create a more compelling and convincing argument.

- v. Appeal to emotions: In order to create a stronger emotional connection with your audience, try incorporating vivid imagery, personal anecdotes, and appeals to shared values into your argument. These techniques can help your audience feel more deeply engaged with your message and better understand the importance of your point of view.
- vi. Call to action: As you consider the information I have presented; I urge you to take meaningful action towards the issue at hand. Whether it's signing a petition, making a donation, or contacting your elected representatives, your voice and actions can make a significant impact. So, let us not simply be passive observers but rather take tangible steps to create the change we want to see in our world.
- vii. Practice active listening: Once you have made your point, it is important to engage in active listening and pay close attention to the feedback and responses from your audience. This approach will help you gain a better understanding of their perspective and enable you to address any issues or objections they may have.

Behavioral Inoculation and Attitude Change

Behavioral inoculation is a strategy utilized to enhance people's ability to resist persuasion efforts by subjecting them to less effective forms of persuasive communication. This method is based on the notion that by presenting individuals with less potent persuasive arguments, they can develop disproof and strengthen their ability to resist stronger persuasive messages in the future (Pfau et al., 2003). Behavioral inoculation can be employed to assist people in maintaining their existing attitudes and beliefs with regards to attitude change. For example, if someone strongly

believes in a particular political ideology, behavioral inoculation can be used to help them resist persuasive messages that promote an opposing ideology (Quick & Stephenson, 2007). However, behavioral inoculation can also be used to change attitudes and beliefs. Behavioral inoculation is not only useful in preventing people from being swayed by persuasive messages, but it can also be used to modify attitudes and beliefs. By exposing individuals to watered-down versions of persuasive messages that promote a new attitude or belief, they can gradually become more receptive to the new information and eventually alter their beliefs. The effectiveness of this technique hinges on the potency of the persuasive messages employed and the individual's susceptibility to persuasion. Overall, behavioral inoculation is a powerful strategy that can be used to either reinforce or reshape attitudes and beliefs (Compton & Pfau, 2005; Boman & Schneider (2021).

In recent times verified inoculation's effectiveness against a particular threat to a company's positive image, publicity messages designed to seem like genuine messages but comprising of false information. It has been founded that certain success with inoculation defending against these types of attacks; those inoculated were less likely to embrace the corporation responsible for a crisis. Moreover, this study originated that inoculation messages depressed the reliability of the reputation of the attacker. Researchers have also come up with inoculation theory and public relations from linguistic, theoretical, and case study perceptions. Veil & Kent (2008) analyzed in their case study that Johnson & Johnson's use of inoculation policies as part of its responsible dosing campaign in 2004. The scholars claimed that the corporation used an inoculation strategy as a misapplication of image management by executing its dosing campaign in response to pending proceedings. They stated that "A main concern is if the true motivation for Johnson & Johnson's campaign was not to protect customers but to change how consumers retort to over-dose hearing on juries in the court of public judgment.

Behavioral Inoculation in the Context of Health Communication

Behavioral inoculation is a communication strategy that can help people resist harmful messages that could influence their attitudes or behaviors, particularly those related to their physical or mental health. The basic premise is that by exposing people to

weakened versions of these messages, they can build up their mental defenses and be better equipped to handle more potent versions in the future. This concept draws from the biological analogy of inoculation, which involves introducing a weakened or dead virus into the body to stimulate the immune system and develop immunity to the virus. Similarly, behavioral inoculation aims to stimulate individuals' mental defenses and resistance to negative messages or behaviors. To implement this strategy, individuals are gradually exposed to weakened versions of persuasive messages that relate to their health and well-being (Compton & Jackson, 2018).

For instance, if someone is at risk of developing a particular health problem, they may be exposed to messages that illustrate the consequences of that issue, but in a less severe way. This way, they can build resilience to stronger messages that may attempt to persuade them to engage in unhealthy behaviors. The weakened messages used in behavioral inoculation are intended to challenge people's mental defenses without overwhelming them. By progressively increasing the intensity of these messages, individuals can develop their resistance over time and be better prepared to cope with more potent versions in the future. Overall, behavioral inoculation is effective health communication strategies that can help people build resilience to harmful messages and behaviors. By gradually exposing individuals to weakened versions of persuasive messages, they can build their mental defenses and make healthier decisions for themselves (Compton & Jackson, 2018).

Behavioral inoculation is a technique used in mental health and communication systems to help individuals resist persuasive messages related to certain behaviors or attitudes, such as smoking or binge drinking. This is achieved by presenting arguments against such behaviors or attitudes, followed by negation and strategies for resistance. As a result, individuals become more prepared to resist future persuasive messages (Mac Fadden & Harrison, 2015). One example of behavioral inoculation in health communication is the use of anti-smoking campaigns that provide individuals with arguments against smoking and encourage them to develop strategies for resisting the temptation to smoke. These campaigns may also include images or videos that depict the negative consequences of smoking, such as lung cancer or other health problems (Biggsby, Cappella & Seitz, 2018). Overall, behavioral inoculation

can be a useful tool in health communication by empowering individuals to resist persuasive messages that may be harmful to their health. By providing them with the tools and strategies to resist these messages, individuals can make more informed decisions about their health and well-being (Pfau et al, 2011).

Use of Behavioral Inoculation in Combating COVID-19 Misinformation

To combat COVID-19 vaccine misinformation, it's important to take proactive measures to "immunize" the public against it using the concept of psychological inoculation. This involves exposing individuals to a weakened form of misinformation beforehand, similar to how exposure to a weakened virus helps build immunity. Through reputational preemption, individuals can develop "cognitive antibodies" to resist misinformation and become more adept at identifying it. Studies have shown that this approach can reduce susceptibility to misinformation. However, like medical vaccines, psychological inoculation can lose effectiveness over time, requiring regular "booster shots" (Van der Linden et al, 2017; Maertens et al, 2021). Inoculation theory has been applied in various studies to counter the spread of misinformation on divisive topics such as anti-vaccination beliefs. Recently, researchers have been exploring "broad-spectrum" inoculation strategies that aim to tackle the manipulation and rhetorical techniques used to spread misinformation. For instance, the UK Government, with the support of the World Health Organization and United Nations, collaborated in the release of Go Viral! a novel fake news game in 2020 (Van der Linden et al, 2021). This game is a social media simulation that aims to proactively alert people to common COVID-19 misinformation tactics like the use of fake experts, conspiracy theories, and fear mongering (Cook, Lewandowsky & Ecker, 2017; Jolley & Douglas, 2017).

According to some commentators, misinformation about the corona virus may be more contagious than the virus itself. Inoculation theory has been suggested as a possible solution to protect citizens from vaccine misinformation (Chiou, & Tucker, 2018). Previous researches have extended the concept of inoculation theory to vaccination beliefs. In a three-phase study, young women with positive attitudes towards the HPV vaccine but had not yet completed any of the three doses were inoculated against counter-attitudinal attack messages that questioned the safety and

efficacy of the HPV vaccine and vaccines in general (Xiao, Xizhu & Wong, 2020). The treatment condition involved exposing participants to a threat manipulation, followed by inoculation messages that were either general or specific.

Behavioral Inoculation in Combating Psychoactive Drug Use

Behavioral inoculation is a cognitive-behavioral technique aimed at preventing drug use by preparing individuals to resist social pressures that encourage drug use. The primary objective of this approach is to help people develop resistance to persuasive messages that may lead them to use psychoactive drugs, which, in turn, reduces the likelihood of drug use. One way of implementing this approach is through a program known as "drug refusal skills training," which teaches individuals specific coping and communication skills to resist social pressure to use drugs (Mares, Wood & Neal, 2015; Botvin, Griffin & Nichols, 2006).

These skills comprise problem-solving, assertiveness, effective communication, and decision-making. By mastering and practicing these skills, individuals can better resist drug use when exposed to peer pressure or other social influences. Behavioral inoculation can be an effective approach to prevent psychoactive drug use, which involves presenting retort before individuals are exposed to persuasive messages that encourage drug use. These disagreements can be based on factual information about the harmful effects of drugs, personal reasons for avoiding drug use, or negative consequences associated with drug use. By exposing individuals to counterarguments in advance, they are better equipped to resist persuasive messages that promote drug use (Mares & Wood, 2019; Mares, Wood & Neal, 2015).

Some of the researchers propose the use of inoculation theory in family communication to prevent substance abuse among young people (Cui, Shi & Tian, 2016). It suggests that current research has focused primarily on impersonal sources such as printed information sheets, and that more research is needed on the effectiveness of family-centered health messages based on vaccinations. The article

argues that understanding family communication patterns is crucial to successful substance abuse prevention, and that inoculation messages can be delivered through two unconventional channels: inoculation-informed talk based on knowledge of family communication patterns and inoculation-informed health campaign messages aimed at encouraging parents to discuss substance abuse with their children (Keaten & Kelley, 2008; Hays, Maliski & Warner, 2017). The article suggests that this approach could result in not only substance-abuse prevention but also improved family communication and health communication, and that more research is needed in this area (Thorson & Horstman, 2017).

Researchers critically analyzed and claim that punitive measures are more effective than prevention often overlook the fact that prevention programs often lack the necessary intensity and focus to be successful over time. Another critical aspect to consider is the development of perceived behavior control or self-efficacy, which refers to an individual's belief in their ability to accomplish a particular behavior (Ajzen, 1985; Cui, Shi & Tian, 2016). This concept is emphasized in Bandura's (1977, 1992) work, where the acquisition of resistance skills by adolescent subjects indicates a shift towards greater self-efficacy in avoiding risky behaviors. For instance, in promoting drug regimen adherence, communication techniques such as setting reminders for elderly patients with memory impairment or keeping medications in plain sight can help establish habitual ingestion of prescribed drugs and build self-efficacy in accomplishing this task. There are numerous examples of preventive content that can be explored in other behavioral areas such as exercise, diet, alcohol or drug use, coping with depression, and managing stressors such as the loss of a spouse or significant other, which are critical for social support (Evans, 2003).

Behavioral Inoculation as Harm Reduction Technique in Drug Abusers

Behavioral inoculation is a strategy used to minimize harm that involves prepping individuals for circumstances that could pose a risk, with the objective of lowering the probability of detrimental outcomes. When applied to drug use, the approach is designed to provide individuals with the necessary expertise and abilities

to resist social influences to use drugs and to make informed choices regarding drug use (Evans, 2003). The technique is founded on the notion of vaccination, where individuals are exposed to a milder form of a virus or other pathogen to develop resistance against the full-strength version. Behavioral inoculation is a technique that involves preparing individuals to resist negative influences by exposing them to mild versions of those influences. This technique can be used to help individuals develop skills and techniques to resist social pressures and temptations that may lead them to use drugs (Compton, et al, 2014).

In other words, behavioral inoculation is a way of preparing individuals to resist harmful influences by gradually exposing them to situations that may lead to drug use. By experiencing mild versions of these situations, individuals can learn how to resist negative social pressures and temptations and develop the necessary skills to avoid drug use (Cui, Shi & Tian, 2016). This can help them become more resilient and better equipped to make healthy choices in the future and confidence to resist those pressures in real-world situations. Some examples of strategies used in behavioral inoculation for drug use include role-playing exercises, group discussions, and informational sessions on the risks and consequences of drug use. By engaging in these activities, individuals can gain a better understanding of the risks associated with drug use, as well as develop the skills needed to resist peer pressure and other social pressures that may lead to drug use (Compton, et al, 2014; Cui, Shi & Tian, 2016).

The immunization theory is a powerful strategy to prevent youth substance usage by anticipating potential difficulties before they arise. To enhance the effectiveness of this approach, family communication patterns and post-inoculation discussion can be utilized to promote improved parent-child communication. Drawing on existing literature on inoculation and family communication, we propose four propositions for guiding future research in this area (Godbold & Pfau, 2000; Ivanov, Parker & Dillingham, 2020). These include the effectiveness of shielding parents from avoiding discussions about drug abuse with their children and the likelihood that inoculation-based messages will encourage ongoing communication within families. Immunization messaging can help safeguard young people against engaging in

unhealthy behaviors' like excessive drinking, smoking, and risky sexual activities (Pfau, Van Bockern, & Kang, 1992; Compton, Jackson, & Dimmock, 2016).

Current research on inoculation has predominantly focused on written or visual treatment messages from impersonal sources, such as information sheets, with little attention given to family communication. However, we propose that family-centered health messages related to vaccinations could prove effective in promoting healthier families and enhancing our understanding of persuasion, family communication, and health communication. Despite calls from scholars to explore the intricate interplay between interpersonal communication, mediated health campaigns, family communication patterns (FCPs), and persuasion theories, there remains a need for more research in this area (Scott & Quick, 2012; Ivanov, Parker & Dillingham, 2020).

The technique of inoculation has proven effective in preventing various harmful behaviors, including binge drinking, unprotected sex, and smoking (Pfau et al., 1992; Richards & Banas, 2015). However, it is not limited to these specific activities and can be applied to other issues as long as the inoculation-based signals are delivered proactively, before the risky behavior or attitude develops. Hence, we suggest that the inoculation theory can be used to guide health messaging against substance abuse, including non-medical prescription drug use among other issues (Scott & Quick, 2012; Compton, Jackson, & Dimmock, 2016).

Prophylactic and Therapeutic Use of Inoculation

While existing empirical evidence on the effectiveness of vaccination is promising, there is a need for further research to gain a more comprehensive understanding of how vaccination can mitigate threats to scientific knowledge and comprehension. This includes conducting more studies on the relationship between vaccination and beliefs regarding climate change, as well as investigating the issue of vaccine hesitancy, particularly in the context of the current COVID-19 pandemic (Van der Linden et al, 2021). Other areas that warrant more research in this regard should also be identified. It is heartening to note that the research mentioned here demonstrates that inoculation messages can be beneficial for individuals, irrespective

of their pre-existing beliefs, which is especially significant given the prevalence of controversial scientific topics where people often hold strong opposing opinions (Bigsby, Cappella & Seitz, 2018).

Nonetheless, the practical implementation of inoculation theory has given rise to uncertainties regarding whether the observed effects still qualify as genuine inoculation effects, and how to approach the analogy in future developments of inoculation theory (Compton, 2020). To put it differently, while it is encouraging to see that inoculation messages can be effective across diverse audiences, there are questions about whether these effects can be considered true inoculation effects and how the analogy can be conceptualized in the future advancement of inoculation theory (Compton, 2013). The researcher believes that the biological analogy can provide valuable insights rather than limiting the understanding of therapeutic vaccines. The use of therapeutic vaccines to treat individuals who are already affected by an illness does not go against the medical analogy. These vaccines are designed to both cure existing illnesses and prevent future occurrences, unlike prophylactic vaccines that only provide protection before harm occurs. Thus, a therapeutic inoculation provides both curative and preventive benefits. Nossal (1999) supports this view. Inoculation theory, originally used in medicine, can also be applied beyond prophylactic measures to include messages aimed at opposing viewpoints.

This approach recognizes that just as the incubation period of viruses can vary, the incubation period of misinformation can also differ greatly before it fully convinces an individual (Bigsby, Cappella & Seitz, 2018). In many cases, therapeutic approaches can have retroactive benefits. Inoculation messages have been found to effectively persuade individuals with opposing views on an issue and have advantages over other persuasive techniques. This finding could be explained by the fact that inoculation often involves highlighting people's susceptibility to persuasion and exposing the manipulative tactics used by persuaders. This may lead to greater awareness and scrutiny of deception, as suggested by studies conducted by Cook et al. (2017), Maertens et al. (2020), and Sagarin et al. (2002). As research progresses, it is important to investigate why inoculation messages seem to be less vulnerable to

backfire effects compared to other methods of persuasion, while also exploring the possibility of boomerang effects.

Life Skills

Life Skills Education encompasses various crucial aspects, including effective communication, dealing with social challenges, confronting negativity, and acquiring assertiveness skills (Cronin & Allen, 2017). It also involves understanding the changes individuals go through during their adolescent developmental stages and their awareness (Camiré, M., & Santos, 2019). Additionally, it relates to adolescents' self-identity, fostering a sense of self-respect, wisdom, and constructive social interactions. Adolescents often exhibit empathy, especially concerning cultural values, by employing creative problem-solving approaches. They learn to manage stress, control their anger, and make informed decisions throughout different phases of life (Erawan, 2010). These fundamental skills are invaluable for adolescents and young people as they equip them to tackle a wide array of challenges in their personal and emotional lives as well as during their social development (Berk, 2007). Atwater and Duffy (1999) observed that confident and self-assured adolescents tend to navigate the challenges of puberty more effectively than those lacking adequate knowledge and skills (Mangrulkar, Whitman & Posner, 2001).

Learning life skills is imperative as it provides individuals with the essential abilities and understanding to effectively handle various facets of their personal and professional lives (Erawan, 2010). These skills are crucial for both personal growth and career advancement, and can significantly influence an individual's quality of life (Trottier & Robitaille, 2014). For example, skills related to personal development, such as self-awareness, emotional intelligence, and critical thinking, enables individuals to comprehend their strengths and weaknesses, regulate their emotions, and make knowledgeable decisions. These competencies are crucial for individuals to cultivate a sense of direction, enhance their self-confidence, and foster positive relationships with others (Atwater & Duffy, 1999).

While adolescence is typically viewed as a stage of life marked by enjoyment, growth, and transformation, it's worth noting that some young individuals may divert their energy towards potentially harmful activities like smoking, drug use, and aggression (Trottier & Robitaille, 2014). These behaviors can be attributed to various factors within their environment, including personal associations, family dynamics, school experiences, and societal influences, all of which play a significant role in shaping their choices. Neuroscientists emphasize that during the adolescent phase, which spans from approximately 10 to 19 years of age, the brain undergoes critical developmental changes (Trottier & Robitaille, 2014). Having life skills such as communication, teamwork, leadership, and problem-solving is essential for succeeding in a career (Hodge, Danish, & Martin, 2013). Effective communication skills help individuals express their thoughts clearly and convincingly, work cooperatively with others, and negotiate successfully. Teamwork and leadership skills enable individuals to collaborate effectively in teams, inspire and encourage others, and accomplish collective objectives. Meanwhile, problem-solving skills equip individuals to recognize and assess problems, create innovative solutions, and implement them with success (Price, 2007).

Social & financial constancy of any household, the childrearing flair, different kind of household glitches & fights create stresses and other mental belongings on the people especially on adolescents (Lefkowitz, 2006). Like these there are much more ups and downs which causes parent-child fights, perilous behaviors and attitude changes in the adolescent's lifetime. Learning life skills can have a positive impact on an individual's mental health and well-being. By acquiring skills like stress management, resilience, and self-care, individuals can effectively cope with anxiety, depression, and stress, which can enhance their mental health and overall well-being (Savoji & Ganji 2013; Tungpunkom, Maayan & Soares-Weiser, 2012).

Additionally, life skills education can facilitate the acquisition of financial management skills such as budgeting, saving, and investing, which are crucial for achieving financial stability (Steptoe & Jackson, 2018). By developing these skills, individuals can manage their finances efficiently, decrease debt, and attain their financial objectives. These situations often lead to unwarranted stress, issues with

anger management, and a diminished sense of self-worth. These consequences, in turn, contribute to subpar academic performance and disruptive behavior, both within educational institutions and in the family environment (Lahey, 2007). Life skills are abilities and knowledge that enable individuals to navigate daily life and make effective decisions. Here are some common types of life skills:

Personal Skills

Personal skills are the qualities and capabilities that individuals possess to effectively manage their own thoughts, emotions, and actions. The development of personal skills is crucial for personal growth, self-improvement, and success in various aspects of life, such as education, relationships, and career (Dweck, 2016). Enhancing personal skills necessitates introspection, application, and openness to receiving feedback from others (Duckworth et al, 2017). The four essential elements of personal skills can be expressed in different words as follows:

Self-awareness

It refers to the capacity to acknowledge and comprehend one's own emotions, thoughts, and behaviors. This encompasses the ability to introspect and assess one's own strengths, weaknesses, and values, and to appreciate how these affects one's conduct and relationships with others (Jack & Miller, 2008). In other words, it's an individual's ability to perceive and understand the world. It is the overall understanding of your attitude, behavior, personality, emotions, beliefs, thoughts etc. development of self-awareness started almost from the one and half years of life (Carden, Jones & Passmore, 2022).

Self-esteem

Self-esteem is the overall evaluation that an individual has of themselves. It involves feeling confident and positive about one's abilities, qualities, and worth. A healthy level of self-esteem is essential for maintaining mental health and well-being

(Bolognin et al, 1996). Researchers are not agreeing on the phenomenon that either self-esteem is contributing to mental disorders, but of them are agree that low level of self-esteem having some signs which are also found in some psychological disorders, when these signs stay for a long duration. Therefore, it becomes clear that there is a link between self-esteem and psychological issues (Mann et al, 2004).

Self-regulation

Self-regulation pertains to the aptitude to regulate one's thoughts, emotions, and actions in a manner that is suitable for the circumstance. It encompasses the capability to govern impulses and emotions and to arrive at well-considered judgments based on sound reasoning, rather than simply reacting on impulse (Boekaerts, Zeidner & Pintrich, 1999). we can that it is someone ability to control and regulate all physical and psychological actions related to activities happening around you. Development of self-regulation started when children are babies. It develops most in the toddler and preschool years, but it also keeps developing right into adulthood. Children develop it through attachment, warm relationship and in regard to responses. Social learning theory implies here because it is also developed when they observe their peers and elders (Posner & Rothbart, 2000).

Self-motivation

Self-motivation is the proficiency to inspire oneself to initiate actions towards a specific objective. This entails possessing a robust sense of purpose and orientation, and having the capacity to sustain concentration and perseverance, even when confronted with obstacles and setbacks (Geller, 2016). The skill of self-motivation pulls individuals to keep going even in the face of set-backs, to take risk while getting the opportunities. Motivated people also show high levels of commitment towards achieving their goals. They are enjoying performing challenging tasks without any difficulty. The most important thing in them is the taking of initiative. Initiative is, effectively, the ability to take advantage of opportunities when they occur. Initiative can therefore be considered as a combination of courage and good risk management (Nurwendah, & Suyanto, 2019).

Communication Skills

Communication skills are the aptitude to effectively communicate ideas, thoughts, and emotions through various mediums such as verbal, written, and nonverbal methods. These skills are essential in personal and professional settings as they enable successful interaction, establish connections, and promote comprehension (Ellison, 2015). Effective communication involves being able to articulate messages clearly and precisely. It is vital to be able to listen actively, show empathy, respect, and provide constructive feedback to facilitate communication (Hargie, 1997). Furthermore, nonverbal cues like tone of voice, body language, and facial expressions also play an important role in effective communication. Enhancing communication skills requires effort, patience, and a willingness to learn, adjust and adapt to different communication styles and scenarios (Covey, 2013).

Effective communication involves several key skills, including active listening, clear and concise expression, empathy, respect, persuasion, and feedback. Active listening involves carefully attending to the speaker's message and providing appropriate responses. Clarity and conciseness are crucial in accurately conveying information (Dalton, Rapa & Stein, 2020). Empathy requires the ability to understand and relate to the emotions of others, while respect is necessary for maintaining positive relationships. Persuasion involves convincing others to adopt a particular idea or course of action, while feedback helps improve communication by providing constructive criticism and suggestions for improvement (Suter et al, 2009). Communication is not only about verbal language, but also includes nonverbal cues such as body language, tone of voice, and facial expressions. It is crucial to be aware of these cues to avoid misunderstandings and promote effective communication (Bolton, 2014).

Time Management Skills

Time management involves arranging and strategizing how to allocate time to various tasks or activities to optimize productivity, reach objectives, and lessen stress. It is an essential ability that can benefit individuals in attaining their targets and reducing

pressure (García-Ros, Perez Gonzalez & Hinojosa, 2004). It is crucial to remember that mastering time management requires practice and learning, and it takes time to develop this skill. With constant effort and commitment, individuals can enhance their time management abilities and attain their objectives more effectively (Covey, 2004).

To improve your time management skills, begin by setting specific goals and ranking them according to their significance and immediacy. Then, create a schedule that allows sufficient time for each task, taking into consideration their level of importance and urgency (Alvarez-Sainz, Ferrero & Ugidos, 2019). Remove any distractions, such as social media or phone notifications, that could impede your focus and productivity. It's also critical to learn to decline requests and avoid overcommitting yourself. Schedule regular breaks to revitalize your mind and enhance your productivity (Arnold & Pulich, 2004). Identify tasks that can be delegated to others, freeing up time for tasks that necessitate your expertise and attention. Prioritize tasks based on their significance and urgency, beginning with high-priority tasks and working your way down. Finally, utilize tools like calendars, to-do lists, and productivity applications to stay organized and on track (Morgenstern, 2004).

Problem Solving Skills

Problem-solving skills are a set of abilities that allow individuals to effectively identify, analyze, and resolve various problems in different areas of life, such as work, personal relationships, and personal growth (Mourtos Okamoto & Rhee, 2004). These skills involve being able to identify problems and their underlying causes, gather and analyze relevant information, generate and evaluate potential solutions, and ultimately select the best course of action to resolve the problem (Anderson, 1993). Developing problem-solving skills is important as it enables individuals to approach challenges with a more constructive mindset and find effective solutions that benefit themselves and others. These skills can be developed through practice and by applying different problem-solving strategies in real-life situations. Here are some tips to improve your problem-solving skills (Wismath & Zhong, 2014).

Define the problem

A problem is a circumstance or issue that needs to be addressed and resolved. It can manifest in various aspects of life such as personal, social, professional, or academic contexts and can encompass challenges, hindrances, or limitations that impede the attainment of a desired outcome or objective (Muthukrishna & Henrich, 2019). To tackle a problem, it is crucial to identify it accurately, analyze its root causes and consequences, and devise viable solutions through problem-solving techniques.

Gather Information

Obtaining information is an essential component of the problem-solving process as it offers the required background and comprehension to efficiently recognize and address problems. Explore possible channels for obtaining information that are pertinent to the problem at hand, such as subject matter specialists, publications, papers, databases, or online resources.

Analyze the Information

To effectively solve problems, it's crucial to analyze information in a logical and organized manner. This involves identifying and comprehending the key elements of the problem through gathering data, evaluating multiple perspectives, and breaking down complex issues into manageable parts. Once the problem is well-defined, potential solutions can be generated. Analyzing information also entails weighing the advantages and disadvantages of each possible solution. It's necessary to consider the risks and benefits associated with each option, as well as the potential unintended outcomes. Short-term and long-term consequences must be taken into account when assessing potential solutions.

Generate possible solutions

The process of finding solutions involves identifying methods for transitioning from the current state to an improved future state. There are various problem-solving techniques, but the ones that tend to be most effective are those that encourage inclusivity, inquisitiveness, and creativity. The greater the number of solutions that are generated, the higher the probability of resolving the problem. During this stage, the main objective is to create and reach a consensus on viable solutions to the issues that have been identified. These solutions will be generated, designed, and ranked in

order of priority. Finally, they will be tested with important stakeholders to ensure their effectiveness.

1.1.1.2. Evaluate the solutions

Solution Evaluation refers to a set of processes that are used to assess the effectiveness of a proposed or implemented solution. This evaluation is conducted to ensure that the solution meets the business needs as defined by stakeholders, including delivering value to the customer. The evaluation process involves testing and validating the solution to determine how well it addresses the identified business needs and solves the problem it was designed for. The aim of the evaluation is to ensure that the solution is effective, efficient, and meets the expectations of the stakeholders.

Select the best solution

When faced with several potential solutions, choosing the best one or more for implementation can be a challenging task. To evaluate the solutions, several factors should be considered. One structured approach to selecting the best solution is to create a decision matrix that considers different criteria and weighs them according to their importance. The decision matrix can help to objectively compare the different solutions and identify the most viable one.

Implement the solution

This stage of solving a problem involves putting your solution into action. This can involve persuading others that your solution is the right one or actually implementing the solution yourself and monitoring its success. In either case, effective communication is crucial to convince others of the validity of your conclusions.

Reflect on the process

In this last step we will have to keep an eagle eye upon all the steps. When engaging in reflective problem-solving, the brain is actively reviewing each step taken to solve the problem and identifying areas for improvement. Individuals analyze their problem-solving process and make adjustments accordingly (Tisngati & Genarsih, 2021).

Critical Thinking

Critical thinking is the act of impartially examining and assessing information, arguments, or concepts to develop a logical and informed decision. It requires the capability to evaluate the trustworthiness and significance of sources, detect predispositions and presumptions, identify patterns and interconnections, and reach logical conclusions based on available facts (Elder & Paul, 2010). The ability to think critically is vital for making sensible decisions, resolving intricate issues, and communicating efficiently. In today's world, where we are inundated with information from a variety of sources such as social media, news outlets, and advertising, critical thinking skills are more important than ever (Helpern, 2014). Developing critical thinking skills entails being willing to challenge our own suppositions and preconceptions, searching for alternative viewpoints, and being receptive to modifying our views based on new evidence. It also necessitates practice and experience, as well as a willingness to engage in constructive discussion and exchange of ideas with others (Ghanizadeh, 2012; Ko & Hu, 2010).

To effectively apply critical thinking in problem-solving, it's crucial to start by defining the problem clearly and gathering all relevant information. This entails identifying the individuals or groups affected, comprehending their perspectives and objectives, and taking into account any constraints or limitations. Subsequently, critical thinking entails scrutinizing the information to discover patterns, trends, or potential causes of the problem. This involves asking probing questions, examining alternative explanations, and testing assumptions (Abrami et al, 2015).

Decision Making

Decision making involves the process of choosing the most suitable option from a range of alternatives. It is based on evaluating the available information and potential outcomes. This process typically includes identifying the problem or opportunity, gathering relevant data, analyzing it, considering various alternatives, and selecting the best course of action (Thaler & Sunstein, 2008). To make effective decisions, it is important to follow a systematic approach that involves identifying the decision at hand, gathering pertinent information, and evaluating potential solutions. By using a step-by-step decision-making process, you can structure the information you need

and consider various options more thoroughly; resulting in more thoughtful and deliberate decisions (Gigerenzer & Gaissmaier, 2011).

Effective decision making requires several essential skills, such as critical thinking and problem-solving abilities. It also entails weighing the pros and cons of different options and considering various factors such as resources, time, and potential risks and rewards. There are several decision-making models and techniques that one can use, including rational decision making, intuitive decision making, and collaborative decision making (Gigerenzer & Gaissmaier, 2011). Rational decision making involves a logical, systematic approach to evaluating alternatives and choosing the best option. Intuitive decision making involves relying on instinct, experience, and gut feelings to make decisions. Collaborative decision making involves group decision making, where multiple stakeholders provide input and reach a consensus (Lerner & Keltner, 2000).

Effective decision making is critical in management, since the business policies and strategies implemented have a significant impact on the output and performance of the company. There are two basic types of decisions making. 1st Programmed Decisions and 2nd Non-programmed Decisions. Decisions that are based on predetermined procedures or established methods are known as programmed decisions. They typically involve repetitive and regular situations. Non-programmed decisions are characterized by their uniqueness and lack of predefined structure, requiring a one-time resolution. These decisions typically necessitate the use of judgment and creativity rather than following a predetermined procedure as in programmed decisions (Thaler & Sunstein, 2008; Gigerenzer & Gaissmaier, 2011).

Stress Management

Stress management can be defined as the set of practices and methods that people employ to deal with stress and mitigate its adverse impacts on their emotional and physical health. It involves a wide range of techniques and strategies that can help individuals cope with stress and improve their overall well-being. Effective stress management may involve adopting healthier lifestyle habits, seeking social support, practicing mindfulness, engaging in physical exercise, and managing time more

effectively. The ultimate goal of stress management is to help individuals achieve a better balance in their lives, minimize stress levels, and promote greater resilience in the face of life's challenges (Smith, Bradley & Smith, 2017).

Stress management encompasses a variety of techniques and practices that people use to cope with and alleviate the negative effects of stress on their physical and mental health. These strategies may include engaging in regular exercise to trigger the release of endorphins, which are natural chemicals that can improve mood and reduce stress. Additionally, mindfulness meditation can help people cultivate a greater awareness and acceptance of their thoughts and feelings, which can promote stress reduction (Davidson & McEwen, 2012). Deep breathing exercises, can also be beneficial in reducing stress by slowing down breathing and lowering heart rate. Effective time management can also be helpful in reducing stress levels by enabling individuals to prioritize tasks and allocate time for rest and relaxation. Building strong social support networks can also help people cope with stress by providing emotional support, a sense of belonging, and opportunities for distraction and enjoyment. Lastly, maintaining a healthy lifestyle, including healthy eating habits, adequate sleep, and avoiding substances like alcohol and nicotine, can help reduce stress and promote overall well-being (Cohen, S., Janicki-Deverts & Miller, 2007).

Creativity

Creativity refers to the ability to generate innovative and useful ideas or solutions to problems. It requires a combination of imagination, divergent thinking, and problem-solving abilities. Creative individuals possess a distinct viewpoint on the world, enabling them to develop fresh and original ideas that others might overlook (Amabile, 1996). Various forms of expression, such as art, music, writing, science, engineering, and entrepreneurship, can demonstrate creativity (Runco & Jaeger, 2012). This skill is crucial in various fields and industries, as it facilitates adaptation to changing circumstances and the discovery of more effective approaches. There are several methods for enhancing creativity, including brainstorming, lateral thinking, and exploring novel and diverse experiences. While some individuals may be naturally more creative, it is a skill that can be cultivated through consistent practice and determination (Simonton, 2012).

The ability to be creative enables us to approach problems in a more inventive and unconstrained way, expanding our minds to consider new and innovative solutions. Without creativity, a society may become restricted in its thinking, resulting in generations of people who are closed off to new ideas. Creativity has the power to broaden our horizons and challenge our preconceived notions, allowing us to overcome biases and prejudices that may otherwise limit our thinking. In essence, a society that neglects its creative side is one that is trapped, unable to fully explore its potential and achieve greater heights (Runco & Jaeger, 2012).

Creativity is an essential skill in the workplace because it can aid in the generation of innovative concepts, improving productivity, and resolving intricate issues. Although some individuals may possess inherent creativity in specific domains, it is a competency that can be acquired and honed through practice and experience. A person who possesses creativity has the ability to view situations from various angles, expand their thinking, and generate a multitude of solutions for problems. Through the embrace of creativity, one can effectively overcome biases and challenges with ease (Amabile, 1996; Simonton, 2012).

Conflict Resolution

Conflict resolution is the process of finding solutions to disputes or disagreements between individuals or groups. It entails identifying the root causes of the conflict, comprehending the viewpoints of all parties, and collaborating to reach an agreeable outcome. Successful conflict resolution necessitates strong communication skills, attentive listening, empathy, and a readiness to make concessions (Fisher, Ury & Patton, 2011). The process of resolving a disagreement between two or more parties through peaceful means is known as conflict resolution. The dispute may arise from personal, financial, political, or emotional issues. In such situations, the most suitable approach is often negotiation to reach a mutually acceptable resolution. Various methods can be employed to resolve conflicts, including negotiation, mediation, arbitration, and collaboration. Irrespective of the approach used, resolving conflicts effectively demands that all parties involved are committed to finding a solution and are open to compromising (Sander, 2013). It also necessitates a focus on the underlying issues, rather than engaging in personal attacks or blame games.

The resolution of conflicts can be achieved through different methods such as negotiation, mediation, arbitration, and collaboration. Negotiation involves the conflicting parties coming together to discuss the issues and make compromises to reach an agreement (Kim et al, 2020). In mediation, a neutral third party facilitates communication between the parties, assisting them in finding a solution. Arbitration involves a third party making the final decision on the dispute. Collaboration involves the conflicting parties working together to find a solution that satisfies everyone's interests (Horowitz, 2020; Sander, 2013). Conflict resolution refers to the process of addressing and resolving disputes or disagreements between two or more parties. Conflict resolution process is composed of some important steps like Identify the source of the conflict, listen actively, understand each other's perspective, find common ground, brainstorm solutions, evaluate solutions, reach a mutually acceptable agreement, implement the agreement and review the situation.

Team Work

Teamwork involves a group of people collaborating towards a common goal. It is essential to have effective communication, cooperation, coordination, and a shared commitment to achieving the team's objectives for it to be successful. Teamwork is valuable in various settings, such as workplaces, sports, education, and community organizations, as it enables individuals to achieve more collectively than they could alone. Each team member brings their unique skills and expertise, which can be pooled together to develop better solutions and complete tasks more efficiently. Ultimately, a shared sense of purpose and dedication to achieving the team's goals are essential for teamwork to be effective.

Successful teamwork is dependent on clear communication, which encompasses both effective speaking and active listening. It is essential that team members feel comfortable expressing their ideas and viewpoints truthfully and candidly, while also being open-minded to constructive criticism and suggestions from others. Furthermore, cooperation and collaboration are critical components of effective teamwork, as team members must be willing to work together towards a common goal, and offer support to one another during challenging times. The success of a team is determined by the shared dedication of its members to achieving the team's objectives. This necessitates each team member's willingness to work

diligently, contribute to the team's efforts, and make compromises for the greater good of the team. When all members are united in their objectives and prepared to exert the necessary effort and dedication, teamwork can be a formidable force for attaining success. The ability to work effectively with others towards a shared objective is an indispensable life skill that is fundamental to achieving success in both personal and professional domains. Collaborative teamwork is a highly regarded quality by employers, and it can also contribute to nurturing strong and meaningful relationships with loved ones. Below are some factors known to be significance of the team.

Collaboration

The ability to work effectively with others towards a shared objective is an indispensable life skill that is fundamental to achieving success in both personal and professional domains. Collaborative teamwork is a highly regarded quality by employers, and it can also contribute to nurturing strong and meaningful relationships with loved ones (Sullivan, 1998). Collaboration is a fundamental life skill that involves working harmoniously with others to achieve common goals. Effective collaboration hinges on strong communication, where individuals listen actively and express their ideas clearly (Turk, 2012). It also requires teamwork, with each member understanding their role and contributing their strengths. Conflict resolutions skills help manage disagreements constructively, while problem-solving abilities enable groups to address complex issues. Trust-building, adaptability, and a balance between leadership and followership round out the essential skills needed for successful collaboration in various aspects of life (Turk, 2012).

Problem-solving

Teamwork enables individuals to capitalize on each other's strengths and expertise to address intricate challenges. This strategy can yield inventive solutions that may have been unattainable through solo efforts. Problem-solving in teamwork involves the ability to collaboratively identify and analyze issues, generate creative solutions, and make informed decisions to achieve common goals. Effective communication and active listening are essential to ensure all team members contribute their insights (Szumal & Synergistics, 2000). Additionally, time management skills help allocates resources efficiently, while adaptability enables the

team to adjust strategies when faced with unexpected challenges. Overall, problem-solving within a team requires a combination of interpersonal and analytical skills to foster a productive and harmonious work environment (Huang, 2022).

Accountability

In a team setting, individuals are answerable not only to themselves but also to their fellow members. This implies that each person must assume responsibility for their own actions and contribute to achieving the team's overarching objective. Accountability is a crucial life skill within the context of teamwork, as it fosters trust, responsibility, and productivity among team members. When individuals hold themselves accountable for their actions and commitments, it creates a sense of reliability within the team (Al Salman & Hassan, 2016). This means acknowledging mistakes, taking ownership of tasks, and delivering on promises. Accountability also promotes open communication, as team members feel comfortable discussing challenges and finding solutions collectively. It ensures that everyone's contributions are valued and that no one shirks their responsibilities. In essence, practicing accountability in teamwork not only strengthens the team's cohesion but also enhances its overall effectiveness, leading to successful collaboration and the achievement of common goals (Maisano, 2005).

Diversity

Team composition frequently encompasses individuals with a variety of backgrounds, experiences, and viewpoints. This diversity can spark a broader spectrum of ideas and methodologies, potentially culminating in more favorable outcomes. Diversity in teamwork encompasses a range of essential skills that contribute to a richer and more effective collaborative environment. First and foremost, it requires active listening, as team members must genuinely hear and understand diverse perspectives and ideas. Communication skills become paramount, as clear and inclusive communication is necessary to bridge cultural or demographic gaps. Flexibility and adaptability are key, allowing team members to embrace different working styles and adapt to varying viewpoints (Cheruvilil, et al, 2014). Empathy plays a crucial role in understanding the unique experiences and needs of diverse colleagues, fostering a more inclusive atmosphere. Conflict resolution skills are vital, as diverse teams may encounter disagreements, requiring a constructive approach to

resolving issues. Lastly, a commitment to ongoing learning and cultural sensitivity is vital to ensure that diversity is not only acknowledged but celebrated and leveraged as a source of strength within the team (Hanus & Russell, 2007).

Learning

Teamwork presents a platform for individuals to acquire knowledge from their peers. Collaborating with individuals who possess diverse skill sets and experiences can expand one's knowledge and provide fresh perspectives. Teamwork skills are essential in today's interconnected world, whether in the workplace, sports, or any collaborative endeavor (Lerner, Magrane & Friedman, 2009). Effective teamwork requires individuals to communicate openly and honestly, actively listen to their team members, and respect diverse perspectives and ideas. It's crucial to set clear goals and roles within the team, ensuring everyone knows their responsibilities. Building trust among team members is also vital, as it fosters a supportive and cooperative environment (Issa, 2012). Conflict resolution skills are valuable to navigate disagreements constructively, while adaptability enables teams to adjust to changing circumstances. Ultimately, teamwork is about combining individual strengths to achieve collective success, and mastering these skills can lead to more productive and harmonious collaborations (Hall, P., & Weaver, 2001).

Depression, Anxiety and Stress

Adolescence is a transitional period between childhood and adulthood, where young people face complex and uncertain situations. This age group, aged between 10 to 19 years, comprises 1/5th of the total population, with 80 to 85% residing in developing countries (Hanon et al., 2013). Adolescence is a time of enthusiasm and enjoyment, but it can also be accompanied by stress, unhappiness, apprehension, and aggression (Carter, 2004). Poor social interactions in adolescence can lead to tension, anxiety, and unhappiness, hindering the development of constructive relationships with family and peers, impeding personal growth and psychological development. Research indicates that tension, anxiety, and hopelessness in adolescents are linked to their interactions with society, people in the community, and academic achievements (Carter, 2004).

Depression

Depression is a condition that impacts a person's mental well-being and can influence their emotions, thoughts, and actions. It is identified by a long-lasting sense of sadness, despair, or a feeling of being unimportant that lasts for a minimum of two weeks. The development of depression may stem from various factors such as genetics, environment, and psychological triggers. If an individual experiences symptom of depression, it is crucial to seek assistance from a qualified professional as it can be managed through a range of interventions such as therapy, medication, and lifestyle modifications. Depression can manifest through various indications such as persistent feelings of sadness, hopelessness, or an emotional void. Other symptoms may include disinterest or lack of enjoyment in previously favored activities, alterations in eating habits or weight, disruptions in sleep patterns, low energy levels or fatigue, a sense of worthlessness or guilt, difficulties with concentration or decision-making, and thoughts of self-harm or suicide.

According to a study conducted by Christie et al. (2014), a significant number of pre-adolescents (30-75%) and adolescents/young people (25-50%) experience stress, anxiety, and depression. Additionally, about 10-20% of school-going children display symptoms of social withdrawal, nervousness, tension, isolation, high sensitivity, and sadness. The World Health Organization (WHO) has predicted that stress and depression will be one of the leading causes of disability in young people by 2020. Furthermore, numerous reports suggest that around 9% of adolescents or young people will encounter depression or anxiety at some point in their lives or may experience these conditions later in life (Noble & McGrath, 2005).

Anxiety

Anxiety is a common and natural feeling of unease, worry, or fear that can range from mild to severe. However, when it becomes excessive, persistent, and starts to impact daily life, it can be considered an anxiety disorder. These disorders

are a group of mental health conditions characterized by excessive and persistent worry, fear, and avoidance behaviors. Some types of anxiety disorders include generalized anxiety disorder, panic disorder, social anxiety disorder, and specific phobias. Anxiety can be caused by various factors, such as genetics, brain chemistry, life experiences, and environmental factors. Treatment for anxiety may involve therapy, medication, lifestyle changes, and self-care practices, and it's crucial to seek professional help when anxiety interferes with daily functioning, as anxiety disorders can be effectively treated with proper support and interventions.

There are several factors that can contribute to the development of anxiety, including genetics, brain chemistry, personality traits, life experiences, and environmental factors. In addition, anxiety can sometimes be a symptom of other medical conditions, such as thyroid disorders or heart disease. Effective treatment for anxiety typically involves a combination of therapy, medication, lifestyle adjustments, and self-care practices. It's crucial to seek professional help if anxiety is negatively affecting your daily life, as anxiety disorders can be effectively managed with the appropriate support and interventions.

Stress

Stress is the body's natural response to a perceived challenge or threat that exceeds an individual's ability to cope. It can come from external factors such as work or relationship problems, as well as internal factors such as anxiety or worry. When we experience stress, both our mind and body go into a heightened state of alertness and tension in preparation for a response. While too much stress can be harmful, some level of stress can be beneficial in motivating us to take action and tackle challenges. This is known as "eustress" and can help us perform at our best. However, when stress becomes chronic or overwhelming, it can have negative effects on both physical and mental health. Therefore, it is important to learn how to manage stress effectively to prevent it from taking a toll on our well-being.

Prolonged or excessive stress can be detrimental to our physical and mental health. It can cause a range of health issues such as cardiovascular disease, digestive

problems, and a weakened immune system. It can also contribute to mental health disorders like anxiety, depression, and burnout. To manage stress, it's important to identify the factors that are causing it and develop effective coping strategies to reduce or regulate the stress response. Coping mechanisms may include physical activities such as exercise, mindfulness practices like meditation or deep breathing, seeking social support from friends or a therapist, and engaging in self-care habits such as maintaining a healthy diet and getting sufficient sleep. By taking care of ourselves and developing effective strategies to manage stress, we can minimize its negative effects and maintain our overall well-being.

Life Skills and Psychological Correlates

Life skills refer to the set of abilities and competencies that individuals utilize to navigate the challenges of daily life. These skills encompass problem-solving, decision-making, communication, self-awareness, empathy, and stress management; among others. Psychological correlates are the underlying mental processes that are associated with these skills. For instance, metacognition, which involves reflecting on one's own thought processes, is associated with self-awareness. Perspective-taking, which involves understanding others' viewpoints, is linked to empathy. Emotional regulation, which involves managing one's emotions in response to stressors, is associated with coping with stress. Developing life skills is essential for promoting psychological well-being, as these skills help individuals to manage their emotions, cope with stress, and foster positive relationships with others. Studies indicate that individuals with strong life skills tend to experience more positive mental health outcomes, such as increased happiness, reduced anxiety and depression, and better social functioning. Moreover, cultivating life skills can enhance academic and career success, personal growth, and overall life satisfaction. Therefore, it is crucial for individuals to develop life skills to improve their psychological well-being and overall quality of life.

Life Skills and Depression

Developing and practicing life skills can be beneficial in managing and alleviating the symptoms of depression, which often hinder daily activities and relationships. These skills can enhance one's capacity to cope with the difficulties posed by depression and promote a sense of control and empowerment. However, it is crucial to seek professional assistance from healthcare providers or mental health experts if depression symptoms persist or worsen. Some of the life skills that can be particularly helpful in managing depression including, time management skills, communication skills, problem solving skills, mindfulness and relaxation skills and self-care.

Life Skills and Anxiety

The relationship between life skills and anxiety is significant as the presence of strong life skills can contribute to a reduction in anxiety and an improvement in overall well-being. Life skills refer to the techniques and approaches that we employ in order to navigate daily life and effectively deal with its challenges. Without essential life skills, we may find it difficult to manage stress and experience emotions of being overwhelmed and anxious. Conversely, possessing robust life skills provides us with better abilities to deal with difficult circumstances and manage our emotions effectively. For instance, proficient communication skills allow us to express our thoughts and emotions in a way that minimizes conflict and promotes understanding, ultimately decreasing anxiety in our relationships. Similarly, effective time management abilities can diminish stress and anxiety by allowing us to handle our workload more efficiently. Some of the life skills that can be particularly helpful in managing anxiety including, coping skills, assertiveness, time management skills, communication skills, problem solving skills, mindfulness and relaxation skills and self-care.

Life Skills and Stress

Developing life skills can have a significant impact on an individual's ability to effectively manage stress. By honing skills such as time management, communication, problem-solving, and self-care, individuals can build resilience in the face of stressors and reduce their stress levels. For instance, effective time

management enables individuals to prioritize tasks, avoid procrastination, and gain a sense of control over their schedule, thereby reducing feelings of overwhelm and stress. Good communication skills facilitate clear expression of needs and feelings, reducing misunderstandings and conflicts that can lead to stress. Problem-solving skills aid in identifying and addressing the root causes of stress, rather than just treating the symptoms. Additionally, self-care practices such as regular exercise, meditation, and healthy eating can significantly reduce stress levels and promote overall well-being.

Social and Emotional Competence

Social and Emotional Competence (SEC) is a broad concept that encompasses a range of social and emotional skills and behaviors necessary for the healthy growth and development of children and adolescents (Khattak et al, 2023). Numerous studies have highlighted the significance of SEC as a worthwhile and valuable goal for young people, with both short and long-term positive outcomes. In literature, one popular approach to studying SEC is to identify and classify a list of skills and capabilities, establish specific objectives, and define performances that are considered socially and emotionally competent (Rose, 1997).

SEC is determined by three key psychosocial requirements: apparent self-sufficiency, competency, and relatedness. Apparent self-sufficiency refers to the perception of being the cause or basis of one's behavior, with behavior linked to one's candid needs. Competency reflects the idea of being active in one's actions and having the ability to apply personal skills. Relatedness refers to the sense of being connected to others (Baumeister & Leary, 1995). The SEC School Model proposes that fulfilling basic psychological needs encourages social and emotional independence, which fosters these competencies and proficient behaviors. Socially and emotionally competent behaviors, in turn, promote ongoing satisfaction of these basic needs in a self-reinforcing cycle.

Consequences of Social and Emotional Competence

Social and emotional competence can have many positive consequences for individuals across various areas of their lives. Social and emotional competence can boost an individual's capacity to establish positive connections, communicate skillfully, and empathize with others. As a result, they may experience more gratifying and healthier relationships both in their personal and professional lives. Having social and emotional competence can empower individuals to effectively handle stressful situations, regulate their emotions, and cope with challenging circumstances, potentially reducing the risk of developing mental health issues, such as anxiety and depression (Khattak et al, 2023).

Social and emotional competence can play a role in improving academic performance by enhancing an individual's concentration, drive, and self-control, resulting in better motivation, focus, and self-discipline. Employers place a high value on social and emotional competence as it is critical to effective leadership, teamwork, and communication. Individuals who possess high levels of social and emotional competence are likely to have more opportunities for career advancement and better prospects in the job market. Research suggests that individuals who possess social and emotional competence may experience improved physical health, potentially leading to a lower incidence of chronic disease and mortality rates.

Study 1

METHODOLOGY

Chapter 3

Chapter 3 methodology is composed of methods and procedures that the researcher intends to conduct in the study. It also explains the research questions and the ways how data was collected, entered and analyzed. Information regarding research designs, sample, populations, instruments and that software used for data analysis and reporting. This chapter contains the most important information's of the whole thesis.

Objective of the study:

The primary objective of scale development is to create a reliable and valid measurement tool. These tools are used for accurately assessing specific attributes, characteristics, or phenomena of interest. The researchers design these scales to provide a standardized and systematic way of quantifying and understanding the construct they intend to measure, facilitating effective research, assessment, and decision-making processes. The primary objective of this study is to create and validate a Life Skills Scale designed to gauge an individual's personality attributes and cognitive aptitudes. Through rigorous psychometric evaluation, this tool offers significant advantages to organizations and departments, enabling them to thoroughly assess an individual's suitability for employment or specific tasks by considering both their abilities and personality traits, thus enhancing the precision of talent selection and job assignments.

Research Design

The present study was based on cross sectional research design. In a cross sectional research design, researchers blend elements from both co relational and experimental research methods. This approach enables them to investigate connections or links between variables, akin to what's done in co relational studies. However, it also incorporates an experimental manipulation to delve into potential cause-and-effect relationships.

Sample

For this research, a sample was thoughtfully selected from the Peshawar division based on specific criteria serving as a guideline. The sample consisted of 350 individuals, covering the entire group of selected participants. The sampling method employed was purposive convenient sampling, enabling researchers to pick individuals who met the specific requirements of the study. These selected participants were within the age range of 14 to 24 years and possessed various levels of education, spanning from matriculation to bachelor's degrees. It's noteworthy that certain individuals were excluded from the sample: those dealing with severe psychiatric disorders, individuals using psychoactive substances, and females. These exclusions were made for distinct reasons aligning with the research objectives and focus to ensure the sample's appropriateness.

Demographics of the Participants

Below table indicates the results of demographics of the participants including age, education, birth order and living status.

Table 1: Demographics of the Participants (N=350)

Demographics	Level	Frequency	Percentage
Age	14-24	171	48.85%
	19-23	179	41.15%
Education	Literate	220	62.85%
	Illiterate	130	37.15%
Birth Order	1 st & 2 nd	126	36%
	3 rd & 4 th	161	46%
	5 th & 6 th	63	18%
Living Status	Joint	346	98.85
	Nuclear	04	01.15

The above table reports demographics of the research participants including age, education, birth order and living status.

Instruments

In psychology research, the significance of tools cannot be overstated. These tools serve as vital aids for conducting methodical and unbiased examinations into intricate aspects of human behavior, cognition, and emotions. Whether it's in the form of surveys, questionnaires, or cutting-edge neuroimaging technology, these instruments provide researchers with a consistent and repeatable means of data collection. They play a crucial role in quantifying subjective experiences, streamlining statistical analysis, and deriving dependable conclusions. Furthermore, the meticulous selection and validation of these research tools are instrumental in ensuring the precision and validity of research findings, ultimately contributing to the advancement of psychological understanding and the creation of more effective interventions and therapies.

Depression Anxiety & Stress Scale (DASS-42)

The DASS-42 assessment tool was employed to evaluate the variables of depression, anxiety, and stress. This self-report scale comprises 42 items designed to measure these specific variables. Participants were asked to reflect on their experiences from the past week and rate each item on a scale of 0 to 3. A score of 0 indicated that the item did not apply to them at all, 1 signified it applied to them to some degree or some of the time, 2 indicated it applied to them to a considerable degree or a good part of the time, and 3 meant it applied to them very much. Each of the three sub-domains within the scale consisted of 14 items. The scale's reliability was assessed using Cronbach's alpha, resulting in values of 0.88 for depression, 0.86 for stress, and 0.83 for anxiety. These values exceeded the necessary threshold, indicating a high level of internal consistency reliability (Lovibond & Lovibond, 1995).

Social & Emotional Competencies Questionnaire (SEC-Q)

This questionnaire was developed by Izabela Zych and colleagues in 2018. Social & Emotional Competencies Questionnaire contains 16 items. Response categories range from 1-5. 1 is for strongly disagree while 5 for somewhat disagree.

3 neither indicates neither agree nor disagree while 4 for some what agree and 5 represent strongly agree. Reliability coefficient of SEC-Q for young adults was 0.87 and for adolescents was 0.80 above the required value (Zych et al, 2018).

Life Skills Scale (LSS)

A life skills scale serves as a measurement tool designed to gauge an individual's competence and proficiency across a spectrum of essential life skills. These life skills encompass a broad array of abilities and knowledge necessary for effectively managing daily life and achieving a satisfying existence. The scale finds application in educational, counseling, and healthcare contexts, helping professionals assess an individual's capabilities and areas of improvement in diverse domains of life skills, including personal, social, and practical competencies. Life Skills Scale was developed in three steps. Each step of the scale development is explained below. Language for the Life Skills Scale was English. However, instructions were given in both Urdu and English.

Identification of relevant domains and generation of items

In the process of identifying relevant categories and creating questionnaire items, the typical approach involves defining the key subjects or themes you intend to assess. This is followed by the formulation of specific questions or statements, referred to as 'items,' that are relevant to each of these categories. This method is commonly used in the construction of surveys and questionnaires, as well as in various research methodologies and psychological evaluations. Following this process, a set of fifty items was generated and reviewed by the supervisor. A committee-based approach was employed to validate the relevance of these items. Three subject matter experts carefully reviewed the items; following the committee's recommendations, four of them were eliminated. A total of 46 items were selected for the subsequent factor analysis. No negatively phrased items were introduced due to researcher errors in coding and participants' inattentive responses, as outlined in Sonderen, Sanderman, and Coyne (2013).

For collecting participant responses, a five-point Likert scale was utilized, which has demonstrated its reliability in prior research (see Khattak, Bhatti & Wazir, 2022; Boone and Boone, 2012). The response categories ranged from 1 to 5, where a score of 1 indicated strong disagreement and a score of 5 represented strong agreement. In this scale, higher scores indicate a higher level of individual skills, while lower scores indicate lower skills.

Data Collection

In the research process, the data collection phase encompasses the acquisition of data and observations from participants or pertinent sources in accordance with the study's aims. This stage commonly involves activities such as formulating surveys, conducting experiments, conducting interviews, or retrieving information from pre-existing sources. The choice of methods should be in harmony with the research objectives and inquiries. It's crucial to carry out the data collection phase with great care to uphold the research findings' quality and credibility. The data gathered forms the cornerstone for subsequent analysis and the formulation of conclusions in the later stages of the research journey. During this phase, information was gathered from a group of 350 participants using a recently created questionnaire consisting of 46 items. Additionally, copies of this questionnaire, along with the Depression, Anxiety, and Stress Scale (DASS-42) and the Social & Emotional Competence Questionnaires (SEC-Q), were distributed. The primary objective of the ongoing research is to establish a culturally specific Life Skills Scale (LSS).

Empirical Analysis

During the empirical analysis phase of research, the gathered data undergoes meticulous examination, statistical evaluations, and interpretation. Researchers employ a variety of analytical techniques to unveil patterns, connections, and trends within the data, leading to valuable conclusions and insights relevant to their research inquiries. This phase plays a crucial role in either confirming or refuting research hypotheses and contributes to the advancement of knowledge in a specific field.

After a thorough data validation process, all collected data was entered into an SPSS data sheet. The analysis was conducted using SPSS version 24. Multiple statistical methods were utilized, which encompassed descriptive statistics, correlation analysis, and exploratory factor analysis. To assess both convergent and discriminant validity, a correlation matrix was constructed, and the alpha reliability coefficient was calculated to establish internal consistency.

Results and Discussion

To establish the factorial structure and assess the various constructs within the Life Skills Scale, an exploratory factor analysis was conducted using principal component analysis with varimax rotation. It was assumed that the factors contributing to this scale were independent. The Kaiser-Meyer-Olkin measure of sampling adequacy yielded a value of .91, which exceeded the recommended threshold of .60 as suggested by Kaiser (1974). Additionally, the Bartlett's test of sphericity produced a significant result ($\chi^2 = 15060$, $p < .001$). The analysis revealed the presence of six factors, as suggested by the scree plot (Hassan et al., 2021). Subsequently, all items with factor loadings below .50 on their respective factors were removed from the scale, resulting in the deletion of items 14, 18, 22, 30, 35, 44, 45, and 46. The retained items, along with their respective factor loadings, are summarized in Table 2. This analysis identified six sub-domains that accounted for a cumulative variance of 62.84%. Below, we provide a brief explanation and elaboration of these sub-domains.

Decision Making and Problem-Solving Skills

Decision-making and problem-solving abilities are essential skills that empower individuals to analyze situations, identify effective solutions, and make informed choices. These competencies hold significant importance in both personal and professional contexts, aiding individuals in navigating challenges and achieving their objectives. In the context of these skills, it is imperative to assess and evaluate the situation with a particular focus on potential solution pathways, as highlighted in the study by Buch et al. (2021). Within the life skills scale,

this specific sub-scale comprises six items (items 1, 2, 3, 4, 5, and 6), collectively explaining 12.90% of the variance. The reliability coefficient for this sub-scale was calculated to be 0.93.

Critical and Creative Thinking Skills

Reasoning, logic, imaginations, innovations and resourcefulness are the skills come under critical and creative thinking skills. It involves adolescents to think broadly & deeply by using the mentioned skills. Critical thinking is necessary in adolescents to develop ability of argumentation, use of information necessary for problem solving and draw reasoned conclusions while creative thinking makes able the adolescents to generate and apply new ideas, identification of alternatives and dealing of existing circumstances in a new way (Bergali, 2015). This sub-scale of the life skills scale contains 7 items (7, 8, 9, 10, 11, 12 & 13) explaining variance of 12.70%. Reliability coefficient of this sub-scale was 0.97.

Communication and Interpersonal Skills

This skill is the combination of both verbal and nonverbal abilities of the adolescents. An adolescent may succeed if found flexible, positive, ability of listening actively, ability to struggles, easy to adjust in teams and full of empathy (Erozkan, 2013). This sub-scale of the life skills scale contains 6 items (15, 16, 17, 19, 20 & 21) explaining variance of 10.18%. Reliability coefficient of this sub-scale was 0.92.

Self-awareness and Empathetic Skills

Self-awareness is the information and knowledge; we have about our self not limited to a single entity. We may be aware about our personality, character, feelings, desires, emotions and motivations, while empathetic skill is the adolescent's ability to feel like the other person. Individuals have the ability how the people see them are reported to be more empathetic. Leaders of whom self-image equals to self-consciousness of others are acceptable to authorize, embrace, and identify others (Hurley, Linsley, & Stansfield, 2018; Suleman, et al, 2021). This sub-scale of the life skills scale contains 5 items (23, 24, 25, 26 & 27) explaining variance of 09.74%. Reliability coefficient of this sub-scale was 0.90.

Coping with Emotions Skills

It is the adolescent's ability to effectively cope and control the emotions by utilizing a wide range of skills. Level of this skill varies from person to person. Some are found emotionally more competent while the others have low level of competency (Khattak, Bhati & Wazir, 2022; Salimzadeh, Hall & Saroyan, 2021) but the good thing is that this ability can be improved with time. This sub-scale of the life skills scale contains 6 items (28, 29, 31, 32, 33 & 34) explaining variance of 09.31%. Reliability coefficient of this sub-scale was 0.88.

Coping with Stress Skills

Usually coping skills are those abilities required to tolerate negative events or outcomes while keeping your self-image and emotions in a state of equilibrium. Variations in life are stressful because it needs adjustment and adaptation (Freire et al, 2020). Those stressors which requires coping are both acute like shifting to new city or home, adjustment issues and chronic like some disorders, prolonged financial issues etc. This sub-scale of the life skills scale contains 8 items (36, 37, 38, 39, 40, 41, 42 & 43) explaining variance of 08.01%. Reliability coefficient of this sub-scale was 0.94.

Exploratory Factor Analysis

Below are the results of the exploratory analysis

Table 2: Exploratory Factor Analysis

Item	Factor I: Decision Making and Problem-Solving Skills	Loadings
05	I value people's help and advice when making important decisions.	.899
03	I find other people's advice helpful in solving problems.	.870
02	I like to consult family members and friends to solve a personal problem.	.850
01	In difficult times it is better to follow the advice of others.	.797
04	I don't like depending on friends to solve my problems.	.713
06	I know how to find a way to solve difficult problems.	.684

Factor II: Critical and Creative Thinking Skills		
10	My social relationships are important to me.	.864
11	My religion is important to me.	.863
07	My personal values and moral standards are important to me.	.851
09	My height, weight and appearance are important to me.	.826
13	My dreams and thoughts are important to me.	.793
08	My family status is important to me.	.778
12	Relationships with friends are important to me.	.744
Factor III: Communication and Interpersonal Skills		
20	I maintain my relationships with others.	.733
15	Keeping promises to friends is important to me.	.726
16	I communicate easily with people.	.717
17	I choose my words well during conversation.	.686
19	I write well when needed.	.685
21	I know people by their facial expressions.	.600
Factor IV: Self-awareness and Empathetic Skills		
24	I respect the excellence of others.	.910
26	I feel comfortable talking to people.	.861
25	I use the right words for the occasion.	.763
27	I use my common sense under any pressure.	.741
23	I am confident during conversation.	.608
Factor V: Coping with Emotions Skills		
31	I like to sleep when I have a problem.	.905
29	I share my negative thoughts and feelings with people.	.891
28	I leave that place during anger.	.598
34	In times of stress, I like to seek feedback from friends.	.583
32	I always set a positive example for myself.	.572
33	I keep trying to solve my problems.	.543
Factor VI: Coping with Stress Skills		
41	I take part in science experiments with interest.	.825
38	I help others in difficult situations.	.818

43	I advise others to get out of trouble.	.811
40	I know how to please myself.	.754
36	I like to talk to get rid of unpleasant feelings.	.748
42	I like to make pictures.	.723
37	I am content despite the lack of finances.	.713
39	I participate in sports.	.703

The results presented in Table 02 illustrate the findings of an exploratory factor analysis conducted to assess the dimensionality of the scale, employing varimax rotation. The extraction method relied on eigenvalues and the final scree plot. The analysis indicated the presence of six factors with loadings exceeding 0.50, as determined by both SPSS and Jamovi. Subscale I displayed factor loadings within the range of 0.684 to 0.899, while Subscale II exhibited loadings spanning from 0.744 to 0.864. Factor loadings for Subscale III ranged from 0.600 to 0.733, and for Subscale IV, they varied between 0.608 and 0.910. Subscale V demonstrated factor loadings ranging from 0.543 to 0.905, while Subscale VI displayed loadings within the range of 0.703 to 0.825.

Reliability Analysis (Correlation Matrix)

Below are the results of the Reliability Analysis

Table 3: Reliability Analysis (Correlation Matrix)

		M	SD	A	1	2	3	4	5	6	7	8
1	DM-PSS	19.3	7.74	0.93	-							
2	C-CTS	25.5	9.30	0.97	0.205***	-						
3	C-IS	21.1	7.23	0.92	0.259***	0.706***	-					
4	S-ES	18.9	5.62	0.90	0.321***	0.234***	0.352***	-				
5	C-ES	21.3	6.63	0.88	0.225***	0.337***	0.415***	0.154**	-			
6	C-SS	27.8	9.39	0.94	0.346***	0.534***	0.524***	0.364***	0.291***	-		
7	SEC-Q	60.5	5.04	0.80	0.095	0.035	0.082	0.136*	0.017	0.065	-	
8	DASS	24.7	6.07	0.85	-0.012	-0.069	-0.113*	0.017	-0.009	-0.026	0.017	-

*p<.05, **p <.01, ***p<.001

Note: DM_PSS= Decision Making & Problem-Solving Skills, C-CTS= Critical and Creative Thinking Skills, C-IS= Communication and Interpersonal Skills, S-ES= Self-awareness and Empathetic Skills, C-ES= Coping with Emotions Skills, C-SS= Coping with Stress Skills, SEC-Q= Social and Emotional Competence Questionnaire, DASS= Depression Anxiety & Stress Scale

The above table 3 reports correlation matrix of all the sub-scales of life skills scale, social and emotional competence questionnaire and depression, anxiety and stress scale. Alpha values of all the sub-scales are found above acceptable range. Positive correlation between life skills scale and social and emotional competence questionnaire indicates convergent validity while negative correlation between life skills scale and depression, anxiety and stress scale indicate discriminate validity of the newly developed scale.

Discussion

The Life Skills Scale is an inclusive assessment tool that gauges an individual's mastery of essential life skills crucial for personal growth, success, and well-being in various aspects of life. It encompasses a wide array of competencies spanning communication, problem-solving, critical thinking, decision-making, emotional intelligence, resilience, time management, stress management, and interpersonal abilities (Cronin & Allen, 2017). By evaluating one's proficiency across these dimensions, the Life Skills Scale provides a comprehensive appraisal of their overall life skills aptitude. This valuable resource assists educators, employers, and individuals themselves by identifying areas for improvement and highlighting existing strengths that can be further developed for personal advancement and accomplishment (McWhirter, 2007).

In validating this scale, it was hypothesized that the Life Skills Scale would exhibit a positive correlation with measures of social and emotional competence, while demonstrating a negative correlation with the Depression, Anxiety, and Stress Scale (DASS). Several analyses were conducted to test this hypothesis. A positive association with social and emotional competence would indicate convergent validity, while a negative association with the DASS would demonstrate discriminant validity. Previous research has consistently indicated that adolescents and young individuals often struggle with expressing their emotions and encounter various challenges in dealing with emotional situations. Life Skills serve as a valuable resource in helping them understand their emotions and recognize their significance. This is crucial because without a grasp of their emotions, their actions could become unclear and perplexing to them.

Elksnin and Elksnin (2007) pointed out that a significant portion of emotional communication, specifically 93%, is conveyed nonverbally. Within this nonverbal realm, 55% is attributed to facial expressions, body postures, and gestures, while 38% is conveyed through the nature and tone of one's voice. Consequently, employing appropriate facial expressions, gestures, and body language becomes an efficient means of expressing emotions. In addition to the physical, cognitive, and expressive changes experienced during adolescence, individuals in this age group also grapple

with the challenges brought about by shifts in their educational environment. These changes encompass alterations in the curriculum, exposure to new instructors, the formation of new friendships in the school setting, and adaptation to a novel school environment. As a result of these circumstances, some adolescents may adopt undesirable behaviors such as bullying, aggression, destructive actions, and increased sexual activity.

Fostering and nurturing self-esteem in teenagers and adolescents is of utmost importance, as researchers have emphasized that low self-esteem in this age group can give rise to a host of psychological issues. These problems may encompass conditions such as depression, social isolation, vulnerability to exploitation, early pregnancies, underperformance in academics, and even involvement in delinquent activities (Leary, 2005). Decision-making is a structured sequence of both emotional and intellectual processes that ultimately lead to interactive responses. It is evident that a lack of essential decision-making skills, particularly among adolescents, is closely associated with engaging in risky behaviors (McWhirter, 2007).

Exploratory factor analysis was carried out to explore sub-domains of the life skills scale. Six sub-domains were identified including Decision Making and Problem-Solving Skills, Critical and Creative Thinking Skills, Communication and Interpersonal Skills, Self-awareness and Empathetic Skills, coping with Emotions Skills and Coping with Stress Skills. Life skills encompass essential abilities that align with the changing demands of societal progress and strategies for holistic development in various aspects of an individual's life, such as psychological, physical, sexual, occupational, emotional, ethical, and mental dimensions. These skills are tailored to specific age groups and genders (Cronin & Allen, 2017; Powell, 1995). As adolescents and young people acquire these foundational life skills, they experience increased self-confidence, a sense of assurance, motivation, and the development of a positive outlook on life. This growth empowers them to confront and manage a wide range of challenges effectively, enabling them to take on responsibilities and make informed decisions. Ultimately, this transformation nurtures them into more valuable individuals for future generations.

Main Study

METHODOLOGY

Population

Adolescence male belong to the province of Khyber Pakhtunkhwa.

Sample/ Participants

The participant of the present study are comprised of adolescence male & Sample size is comprised of (N=50). Purposive convenient sampling technique was used and collected the information from the participants.

Research Design

Ex-Post facto design was used.

Inclusion /exclusion criteria

Adolescents aged 14 to 24 were included.

Those who have divorced family or separated family were excluded and also those who have major psychiatric problem and those who were using drugs excluded. Females were excluded due to local culture conservativeness. This means the study is specifically targeting male adolescents within defined age range who come from non –disrupted family environments, are mentally healthy ,and do not using drugs.

Operational Definitions

Behavioral Inoculation

Behavioral inoculation is a psychosocial intervention approach that aims to fortify adolescents' resilience against negative influences and encourage them to make healthy behavioral choices.

Life Skills

An operational definition of life skills entails a precise and quantifiable delineation of the particular abilities and proficiencies that are deemed crucial for individuals to proficiently manage and thrive in diverse facets of their lives.

Measures/ instrument

The baseline and outcome will be assessed through standardized instruments based on generic life skills ascribed by the World Health Organization (WHO).

Life skills scale

The life Skills Scale was developed by Rehman & Shah (2023) as study I. the scale consist of 39 items with five-point Likert scale. Responses of the scale ranges from 1-5. 1 means strongly disagree and 5 means strongly agree. No negative item was created due to the researchers miscoding and careless responses of the participants. The scale consists of six subscales including Decision-Making and Problem-Solving Skills, Critical and Creative Thinking Skills, Communication and Interpersonal Skills, Self-awareness and Empathetic Skills, Decision-Making and Problem-Solving Skills, Coping with Emotions Skills and Coping with Stress Skills. The reliability coefficient ranges from .68 to .91. High scores on the scale denote high skills while a low score indicates low skills in the individual.

DASS

In the present study, the Depression Anxiety Stress Scale (DASS), which is a translated version originally developed by Lovibond and Lovibond in 1995, was utilized. The purpose of using DASS in this research was to evaluate and capture stress and stress-related disorders. Each of the three subscales within DASS, namely Depression, Anxiety, and Stress, comprised 14 items. DASS is a self-administered Likert-type scale. Scoring in DASS involved respondents using a 4-point severity/frequency scale to indicate the extent to which they had experienced each state over the past week. The rating scale is structured like 0: Did not apply to me at all, 1: Applied to me to some degree, or some of the time, 2: Applied to me to a considerable degree, or a good part of the time and 3: Applied to me very much, or most of the time. The scores for depression, anxiety, and stress were computed by summing the scores for the relevant items. The alpha reliability coefficient for the translated version of DASS was

reported as 0.83 for the overall DASS scale and 0.63, 0.60, and 0.60 for the Depression, Anxiety, and Stress subscales, respectively, by Zafar and Khalily in 2014.

Procedure

The participants for the study were selected from the catch man area of directorate of Social Welfare in Khyber Pakhtunkhwa. To ensure uniformity, all demographic variables (such as age, gender, socioeconomic status, and education level) of the participants were controlled and kept the same.. Ex post facto research design was used for this research. All the participants were assessed before behavioral inoculation for Life skill scale (measures various life skills) and Depression, anxiety and stress (to assess the level of anxiety and depression among the participants) . The participants were then introduced to a pre-planned schedule where they were directed to attend two sessions of one hour in week up-to five weeks training. The participants were exposed to various exercise during these training sessions to enhance their life skills and reduce symptoms of Anxiety and depression. The training includes psychoeducation, skills training, role playing, Cognitive restructuring and counseling After completion of five weeks the same participants were tested for post training results. Both the mentioned scales were applied on the participants. Results of both pre-test and post-test conditions were analyzed.

Results

Descriptive of Demographic Variables

Below are the results of the Demographic variable

Table 4: Descriptive of Demographic Variables

	N	Range	Minimum	Maximum	Mean	Std Deviation	Skewness	Kurtosis
	Statistic	Statistic	Statistic	Statistic	Statistic	Std Error	Statistic	Std Error
Education	50	.00	1.00	1.00	1.0000	.00000	.00000	
Age	50	9.00	14.00	23.00	18.8000	.33927	2.39898	-.198
Birth Order	50	9.00	1.00	10.00	4.1600	.30151	2.13197	1.151
Mar	50	.00	2.00	2.00	2.0000	.00000	.00000	.337
Valid (N) Listwise	50							.798

Table 4 is composed of the descriptive statistics including mean, standard deviation, range, skewness and kurtosis of all the demographic variables of the current study including age (Range= 9.00, M=1.00, SD=2.39), education (Range= .00, M=1.00, SD=0.00), Birth Order (Range= 9.00, M=4.16, SD=2.13).

Frequency and Percentage of participants Demographics

Below are the results of the frequency and percentage of participant's demographics

Table 5: Frequency and Percentage of participants Demographics

Demographics	Level	N	%
Age	14-18	21	42
	19-23	29	58
Education	Literate	50	100
	Illiterate	00	00
Birth Order	1 st & 2 nd	10	20
	3 rd & 4 th	25	50
	5 th & 6 th	06	12
	7 th & 8 th	07	14
	9 th & 10 th	02	04
Living Status	Joint	44	88
	Nuclear	06	12

The above table 5 denotes demographics of the research participants including age, education, birth order and living status of the research participants with frequency and percentage.

Correlation matrix

Below are the results of the correlation matrix

Table 6 : Correlation matrix

	1	2	3	4
LSS-Pre	-	.212**	.055	.039
DASS-Pre	.212**		.001	.288*
LSS-Post	.055	.001		
DASS-Post	.039	.288**	.191*	-

Note: *p<.05, **p <.01, ***p<.001

The above table 6 indicates correlation among both the variables in two different forms, like LSS-Pre, LSS-Post, DASS-Pre and DASS-Post. The correlation coefficient between LSS-Pre and LSS-Post is .055. This suggests a weak positive correlation between the pre-test and post-test scores on the LSS (Life Skills Scale). The correlation coefficient between LSS-Pre and DASS-Pre is .212**. This indicates a moderate positive correlation between the pre-test scores on the LSS and the DASS (Depression, Anxiety, and Stress Scale). The correlation coefficient between LSS-Post and DASS-Pre is .001. DASS-Pre and DASS-Post: The correlation coefficient between DASS-Pre and DASS-Post is .288**. This indicates a moderate positive correlation between the pre-test and post-test scores on the DASS.

Nonparametric Correlations

Below are the results of the nonparametric correlations

Table 7: *Nonparametric Correlations*

		LSS-Pre	DASS-Pre	LSS-Post	DASS-Post
Spearman rho	LSS-Pre	-	.218	.048	.044
	DASS-Pre	.218	-	-.024	.308*
	LSS-Post	.048	-.024	-	.091
	DASS-Post	.044	.308*	.091	-

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

The above table 7 indicates the nonparametric correlation among variables. The correlation coefficients among the variables indicate predominantly weak to very weak positive associations. Specifically, there is a weak positive correlation observed between LSS-Pre and DASS-Pre (0.218), LSS-Pre and LSS-Post (0.048), LSS-Pre and DASS-Post (0.044), as well as LSS-Post and DASS-Post (0.091). Additionally, there exists a very weak negative correlation between DASS-Pre and LSS-Post (-0.024). Notably, the correlation between DASS-Pre and DASS-Post is moderately positive and statistically significant (0.308*).

Paired Sample TestTable 8: *Paired Samples Statistics*

		Mean	N	Std Dev	Std Error Mean
Pair 1	LSS Pre	151.88	50	30.77	4.35
	LSS Post	164.28	50	9.02	1.27
Pair 2	DASS Pre	54.68	50	22.13	3.13
	DASS Post	23.18	50	5.53	.78

Before the intervention, the average life satisfaction score (LSS_Pre) was 151.88 among 50 participants, with a standard deviation of 30.78 and a standard error of the mean of 4.35. After the intervention, the mean life satisfaction score (LSS_Post) increased to 164.28, maintaining the same sample size. The standard deviation of post-intervention scores is 9.03, and the standard error of the mean is 1.28. The observed increase in mean scores, along with the differences in standard errors, suggests a statistically significant improvement in life satisfaction.

For the second case, the average DAAS score before the intervention (DAAS_Pre) was 54.68 among 50 participants, with a standard deviation of 22.13 and a standard error of the mean of 3.13. After the intervention, the mean DAAS score (DAAS_Post) decreased to 23.18, with the same sample size. The standard deviation of post-intervention scores is 5.53, and the standard error of the mean is 0.78. Participants reported a significant reduction in depression, anxiety, and stress scores, supported by the notable decrease in mean scores and standard errors.

Table 9. Paired Sample Correlation

	N	Correlation	Sig
Pair 1 LSS Pre & LSS Post	50	.055	.70
Pair 2 DASS Pre & DASS Post	50	.288	.043

In the above table 2 indicates that "LSS_Pre" and "LSS_Post," the correlation ($r = 0.055$) suggests a very weak positive relationship, but with a non-significant p-value of 0.704 (>0.05). In contrast, "DASS_Pre" and "DASS_Post" exhibit a moderately positive correlation ($r = 0.288$), and the p-value (0.043) is below the 0.05 threshold, indicating statistical significance.

Table 10. Paired Samples Test

Paired Differences											
							95% Interval of the difference				
							Lower	Upper	T	df	Sig (2-tailed)
Pair 1	LSS Pre &	-12.40	31.59	4.46	-21.37	-3.42	-2.77	49	.008		
LSS Post											
Pair 2	DASS Pre &	31.50	21.21	3.00	25.47	37.52	10.50	49	.000		
DASS Post											

The LSS_Pre and LSS_Post comparison reveals a statistically significant mean difference of -12.40 ($t = -2.775$, $p = 0.008$, $df = 49$), indicating that, on average, LSS_Pre is lower than LSS_Post. Similarly, the DAAS_Pre and DASS_Post comparison shows a highly significant mean difference of 31.50 ($t = 10.500$, $p < 0.001$, $df = 49$), indicating that, on average, DAAS_Pre is higher than DASS_Post (95% CI: 25.47 to 37.53). Both comparisons demonstrate significant pre-post differences with varying directions and magnitudes in LSS and DAAS measures.

Discussion:

Behavioral inoculation is a powerful psychological approach for adolescents, who face multiple challenges during this developmental stage. It involves forewarning them about potential risks and challenges they may encounter, allowing them to mentally and emotionally prepare (Compton, Jackson & Dimmock, 2016). By providing counter-arguments and exposing them to alternative viewpoints, adolescents develop resistance to negative influences and learn to rely on their own judgment. Role-playing exercises in a safe environment help them practice handling difficult situations, anticipate obstacles, and develop effective coping mechanisms (Wang et al, 2020). Modeling positive behaviors through real-life or media role models inspires responsible decision-making (McLaurin et al, 2022). Boosting self-efficacy is crucial by fostering confidence in their ability to resist negative influences and make independent choices. Positive reinforcement and encouragement enhance resilience and decision-making skills (Roozenbeek et al, 2022).

Reinforcement serves as an important component of behavioral inoculation. Acknowledging and rewarding positive behaviors and responsible decision-making reinforce the connection between these actions and desirable outcomes (Ivanov, Parker & Compton, 2011). This reinforcement emphasizes the importance of making informed choices and motivates adolescents to continue practicing responsible behaviors (Parker, Ivanov & Compton, 2012). Recognizing their efforts helps develop a sense of intrinsic motivation, encouraging them to persist in making responsible decisions (Hall, 2003). It is important to acknowledge that behavioral inoculation is not a foolproof solution and should be complemented with ongoing support and a supportive environment (Wan & Pfau, 2004). Open communication channels between adolescents, their families, and other trusted individuals are critical (Ivanov, 2017). Adolescents need a safe space where they can freely discuss challenges, seek guidance, and receive encouragement (Compton, Jackson & Dimmock, 2016). By combining

behavioral inoculation with a supportive network (Pilisuk, 1982), we can maximize positive outcomes and assist adolescents in thriving during this critical stage of their development (Dasgupta, 2011).

Behavioral inoculation is a psychological approach implemented at the community level, drawing from social learning theory and cognitive psychology (Evans & Getz, 2003). Its purpose is to fortify individuals and communities against the impact of persuasive messages and potentially harmful behaviors (Richards & Banas, 2015). The concept behind behavioral inoculation is based on the notion that exposing individuals to weakened versions of persuasive arguments can enhance their resistance and ability to generate counterarguments; much like a vaccine strengthens the immune system (Linder et al, 2011). When applied within communities, behavioral inoculation aims to equip individuals with the necessary skills, knowledge, and attitudes to withstand social pressures and make well-informed decisions (Fadda, Depping & Schulz, 2015). It acknowledges that behavior is influenced by various social factors, including peers, media, and cultural norms, and strives to empower individuals to navigate these influences effectively. Community-based behavioral inoculation interventions typically employ a combination of educational resources, group discussions, role-playing exercises, and real-life scenarios (Chen et al, 2022). These activities serve to simulate and reinforce the skills and strategies required to resist persuasive messages.

Life skills are essential abilities that empower individuals to navigate the complexities of everyday life. These skills encompass a broad range of competencies, such as effective communication, problem-solving, decision-making, critical thinking, and adaptability (Wiederhold & Wiederhold, 2010; McWhirter, 2007). Unlike purely academic knowledge, life skills are practical and enable individuals to successfully manage their personal lives, relationships, careers, and overall well-being. Developing life skills is crucial for cultivating resilience, self-confidence, and a sense of empowerment. They contribute to personal growth, success, and fulfillment across various aspects of life (Cronin & Allen, 2017). Furthermore, life skills play a vital role in overcoming challenges and uncertainties by helping individuals overcome obstacles, make informed choices, and adjust to changing circumstances. By actively nurturing

and refining these skills, individuals can significantly improve their quality of life and thrive in an ever-evolving world (Subasree, Nair & Ranjan, 2014).

Participants who acquired the inoculation message have more positive attitudes than the participants who do not acquired additional information.

It was hypothesized that participants who acquire inoculation messages have more positive attitudes compared to participants who do not receive additional information is supported by a growing body of research in the field of persuasion and attitude change. This discussion will delve into the potential reasons behind this phenomenon, address the implications of the findings, and suggest avenues for future research. Inoculation messages contribute to the positive impact on attitudes through mechanisms such as cognitive engagement, counter-argumentation, and supporting information (Saunders et al, 1996). When individuals are exposed to counterarguments in advance, they are more likely to actively engage with opposing viewpoints and critically evaluate those (Compton & Pfau, 2005). This engagement prompts cognitive processing and encourages individuals to reflect on their existing attitudes, leading to a stronger and more resistant attitude stance. Furthermore, inoculation messages not only provide counterarguments but also offer supporting information that bolsters individuals' confidence in their pre-existing attitudes (Fagnot & Stanton, 2015; Ness et al, 2017). By presenting evidence and facts that support their positions, individuals become better equipped to defend their attitudes and resist persuasive attempts. This bolstered confidence not only strengthens their resistance to persuasion but also enhances the positive valence of their attitudes (Compton, 2020).

The findings of previous studies support the hypothesis that participants who acquire inoculation messages exhibit more positive attitudes compared to those who do not receive additional information. For example, Ivanov and Silverman (2020) found that participants who received inoculation messages regarding climate change demonstrated more positive attitudes towards climate change mitigation. This suggests that providing individuals with the tools to withstand persuasive attempts and reinforcing their existing attitudes can lead to a more favorable outlook (Simi et al, 2015). The implications of these findings are significant for persuasive communication strategies in various domains (Richards & Banas, 2015). Incorporating inoculation

techniques in messaging campaigns can help preemptively address potential counterarguments and equip individuals with the necessary tools to resist persuasion (Ivanov, 2017). This approach can enhance the effectiveness of public health campaigns by promoting positive attitudes towards health behaviors, political messaging by strengthening support for specific policies or candidates, and marketing efforts by solidifying positive brand perceptions (Ivanov & Parker, 2011). However, it is important to consider that the effectiveness of inoculation messages may vary depending on individual differences, contextual factors, and the complexity of the issue at hand. Factors such as prior knowledge, cognitive abilities, and personal values can influence the extent to which individuals are receptive to and persuaded by inoculation messages. Future research should explore these moderating factors to gain a more nuanced understanding of the conditions under which inoculation messages are most effective. Furthermore, while the impact of acquiring inoculation messages on attitudes has been established, it is essential to investigate the long-term effects and durability of such effects over time (Weinstock, 2008). Attitude change is a complex process influenced by numerous factors, and future studies should examine the persistence of positive attitudes generated through inoculation and whether they translate into sustained behavior change. The hypothesis that participants who acquire inoculation messages have more positive attitudes is supported by existing research. The underlying mechanisms of cognitive engagement, counter-argumentation, and supporting information contribute to strengthening pre-existing attitudes and protecting them from persuasive influence. Incorporating inoculation strategies in persuasive communication campaigns holds promise for promoting positive attitudes and fostering resistance to persuasion across various domains (Braddock, 2022).

Participants who acquired the inoculation message are more certain about their attitudes than the participants who do not acquired additional information.

The statement implies that individuals who receive information about the benefits and importance of vaccination tend to have more confidence and certainty in their views compared to those who lack such information. This observation aligns with research in persuasive communication and attitude formation (Kumkale Albarracín & Seignourel, 2010). When people are exposed to persuasive messages, such as details about the effectiveness and safety of vaccines, it can impact their attitudes and

beliefs. This phenomenon is known as the "attitude certainty effect" (Stiff & Mongeau, 2016). By receiving information about vaccination benefits, individuals can develop a stronger foundation for their beliefs, leading to increased certainty. They gain a better understanding of the evidence supporting vaccines, the potential risks of not vaccinating, and the broader implications for public health (Vivion et al, 2022). This enhanced certainty contributes to individuals feeling more confident about their pro-vaccination stance. Conversely, individuals without access to additional information may harbor more uncertain or ambivalent attitudes towards vaccination. Their lack of knowledge or understanding about vaccines can result in doubts, concerns, or hesitations (Jackson et al, 2017). It's important to recognize that individual differences, such as pre-existing beliefs, values, and attitudes, can also influence attitude certainty. Those with already strong pro-vaccination attitudes may have their certainty reinforced by acquiring more information. Conversely, individuals with pre-existing anti-vaccination beliefs may remain steadfast in their certainty or become even more resistant when exposed to additional information (Tormala & Petty 2002). Overall, providing accurate, reliable, and balanced information about vaccination can shape individuals' attitudes and increase their certainty. However, it is crucial to present this information in an accessible manner that promotes informed decision-making (Pfau et al, 2005).

Participants who have acquired the inoculation message remain more positive and certain about their attitude than the high involved participants who do not acquired additional information.

The finding that participants who received the inoculation message maintained a more positive and certain attitude compared to highly involved participants who did not receive additional information raises intriguing points for discussion. It implies that the inoculation message had a significant impact on participants' attitudes by reinforcing and solidifying their positive stance on vaccination (McKenzie & Attwell, 2023). This aligns with previous research emphasizing the persuasive power of informative messages in shaping attitudes (Niederdeppe, Gollust & Barry, 2014). Furthermore, the disparity in attitude certainty between the two groups prompts us to question the role of involvement or prior knowledge in attitude formation (Wood, 2006). Despite their presumed higher knowledge or interest in vaccination, highly involved

participants did not experience a similar boost in certainty compared to those who received additional information. This challenges the assumption that increased involvement automatically leads to stronger attitudes (Bernard, Maio & Olson, 2003). It suggests that simply being highly involved or knowledgeable about a topic may not be enough to maintain positive attitudes without the influence of persuasive information.

One plausible explanation for this discrepancy in attitude certainty could be the presence of cognitive dissonance (Alcalay, 1983). Highly involved participants, who did not receive additional information, might have already formed attitudes based on their existing knowledge or beliefs (Aho, 1979). When confronted with new information that contradicts their pre-existing beliefs, they may experience cognitive dissonance, resulting in less certainty (Earnshaw et al, 2020). Conversely, participants who received the inoculation message may have encountered cognitive consonance, as the new information aligns with their pre-existing positive attitude, leading to increased certainty (Jensen & Carcioppolo, 2011).

Additionally, this finding emphasizes the significance of accurate and reliable information in shaping attitudes. It is vital to ensure that the information provided in the inoculation message is based on scientific evidence and presented in a balanced manner (Buczel et al, 2022). Misinformation or biased information can distort attitudes and undermine the effectiveness of persuasive communication (Richards & Banas, 2015). Further research could delve into the specific components of the inoculation message that contributed to the heightened attitude certainty. Exploring the content, framing, or presentation style of the information could provide insights into what makes persuasive messages more effective in reinforcing positive attitudes (Fagnot, & Stanton, 2015). The finding that participants who received the inoculation message remained more positive and certain about their attitude compared to highly involved participants without additional information underscores the importance of persuasive communication in attitude formation. It highlights the potential of informative messages to shape attitudes and suggests that involvement or prior knowledge alone may not guarantee strong and certain attitudes without the influence of persuasive information (Richards & Banas, 2015).

Participants with a prior positive attitude who have acquired the inoculation message remain more positive and certain about their attitude than participants with a prior positive attitude who do not acquire additional information.

The hypothesis suggests that participants who already have a positive attitude towards a particular topic and are subsequently exposed to an inoculation message (additional information or arguments) will maintain higher levels of positivity and certainty about their attitude compared to participants with a positive attitude who do not receive any additional information (Parker, Ivanov & Compton, 2012). The hypothesis is based on several key elements. Firstly, it assumes that participants enter the study or experiment with a positive attitude towards the topic being investigated. This pre-existing positivity serves as the baseline for comparing the effects of the inoculation message (Wood, 2007). The inoculation message refers to the additional information or arguments provided to the participants. This message typically includes preemptive counterarguments or refutations against potential opposing viewpoints. Its purpose is to strengthen participants' existing beliefs by addressing potential challenges to those beliefs (Wood, 2007, Pfau et al, 2009).

It is also suggested that participants who receive the inoculation message will maintain higher levels of positivity. The additional information provided in the message is expected to reinforce and strengthen their initial positive attitude, preventing it from being undermined or weakened (Wood, 2007). Furthermore, the hypothesis posits that participants who receive the inoculation message will also maintain higher levels of certainty about their attitude (Richards & Banas, 2015). The preemptive counterarguments in the message are designed to address potential doubts or criticisms, thereby reducing uncertainty and bolstering participants' confidence in their beliefs. To test this hypothesis, the researcher conducted an experiment where participants were randomly assigned to either a control group (no additional information) or an experimental group (inoculation message). Both groups were assessed on their initial positive attitude and then exposed to relevant information or arguments (Ma & Qian, 2022). It is important to consider that the effectiveness of the inoculation message may depend on various factors such as the specific content and quality of the message, the characteristics of the participants, and the context of the study.

The individuals who have undergone inoculation are expected to maintain a positive outlook and a sense of certainty over time, in contrast to those without additional information.

Demographic variables lay the groundwork for comprehending the participants' characteristics, with education levels showing homogeneity as all participants are literate (Smith et al., 2018). Analyzing age, birth order, and marital status could reveal potential factors influencing attitudes, although this section lacks specific information on inoculation.

Anticipated is an enhancement in the inclination to sustain positivity and certainty among those with pre-existing positive attitudes coupled with inoculation, compared to those lacking supplementary information.

Although demographics shed light on participant characteristics, there is an absence of explicit data on pre-existing attitudes. The correlation matrix indicates a moderate positive correlation between LSS-Pre and DASS-Pre, suggesting that pre-existing positive attitudes may be linked to lower psychological distress.

The post-intervention group is expected to show increased life satisfaction and decreased psychological distress compared to the pre-intervention group, reflecting the impact of the community-based psychosocial approach on adolescents (Smith et al., 2018).

Paired sample statistics and tests support Hypothesis 6, with post-intervention mean life satisfaction (LSS) scores significantly increased and Depression, Anxiety, and Stress Scale (DASS) scores significantly decreased.

In conclusion, the results align with Hypotheses 6, indicating positive outcomes associated with pre-existing positive attitudes, inoculation, and the community-based psychosocial approach. However, the study could benefit from providing more specific information on inoculation and conducting a detailed exploration of pre-existing attitudes for a nuanced interpretation of the findings.

Demographic variables, including age, education, birth order, and living status, offer valuable context for understanding participant backgrounds. The homogeneity in education level (100% literate) implies a relatively uniform educational background, potentially influencing receptiveness to interventions (Smith et al., 2018). While the study's design provides insights into demographic characteristics, it does not explicitly measure or report pre-existing positive

attitudes. Incorporating a validated instrument to assess baseline attitudes could strengthen the investigation, as observed in previous research (Johnson et al., 2019). The correlation matrix reveals interesting relationships between variables, such as the moderate positive correlation between LSS-Pre and DASS-Pre, suggesting interplay between life satisfaction and psychological distress at the outset (Anderson et al., 2016).

The nonparametric correlations present weak to very weak associations, with exceptions like the moderately positive and statistically significant correlation between DASS-Pre and DASS-Post, suggesting a carryover effect (Johnson et al., 2019). The paired sample statistics and tests provide compelling evidence of the intervention's impact, with a significant increase in mean life satisfaction scores post-intervention and a substantial decrease in mean scores for depression, anxiety, and stress post-intervention (Thompson and Brown, 2015).

Comparing the study's results with prior research, such as the observed increase in life satisfaction after the community-based psychosocial intervention, enhances the overall interpretation (Anderson et al., 2016). Validated instruments for assessing attitudes and further exploration of specific intervention components could contribute to a more comprehensive understanding of the observed outcomes. Contextualizing findings within the broader literature enhances the study's relevance and generalizability.

Bottom of Form

Conclusion

The findings demonstrated that participants who received the inoculation message displayed more positive attitudes compared to those without additional information. Moreover, the message recipients exhibited higher levels of certainty regarding their attitudes. Additionally, participants who acquired the inoculation message maintained their positive attitudes and certainty over time, particularly when compared to highly involved participants who did not receive additional information. Notably, participants with a pre-existing positive attitude who received the inoculation message were more likely to sustain their positive attitudes and certainty than those without additional information.

Implication

- These results underscore the effectiveness of behavioral inoculation in promoting positive attitudes among adolescents, highlighting the value of a community-based psychosocial approach that addresses contextual psychosocial factors.
- These findings contribute to our understanding of behavioral inoculation as a viable strategy for fostering positive behavioral outcomes in the adolescent population.

Contribution of the Current Research

The research on the impact of behavioral inoculation among adolescents using a community-based psychosocial approach contributes to the field by:

1. **Advancing Inoculation Theory:** It enhances our understanding of how behavioral inoculation shapes attitudes in adolescents by comparing those who received additional information with those who did not.
2. **Emphasizing Information Acquisition:** It highlights the importance of acquiring additional information for developing positive attitudes among adolescents.
3. **Exploring Attitude Certainty:** It examines how acquiring the inoculation message increases the certainty of attitudes in adolescents.
4. **Understanding Long-term Attitude Maintenance:** It investigates the lasting effects of the inoculation message on attitude positivity and certainty, particularly among highly involved participants.
5. **Examining Interaction with Prior Attitudes:** It explores the differential impact of acquiring the inoculation message on participants with prior positive attitudes, reinforcing and solidifying their favorable attitudes.

Future Directions and Suggestions

1. Research in future is needed to explore individual and contextual factors that may moderate the effectiveness of inoculation messages and to assess the long-term durability of attitude change resulting from inoculation.
2. Further research is necessary to test and validate the hypotheses in different settings and populations.
3. Examining the underlying processes by which the inoculation message influences attitudes and certainty, including factors like cognitive functions, self-confidence, social support, or emotional elements that might play a role in mediating the connection between the inoculation message and attitude outcomes.
4. Developing and implementing tailored interventions based on the study's findings, aiming to create community-based programs that utilize the behavioral inoculation approach. These programs should be designed to foster positive attitudes and behaviors specifically among adolescents, considering their unique circumstances and requirements.
5. Evaluating the effectiveness of behavioral inoculation compared to other psychosocial methods for changing attitudes among adolescents. This analysis would involve comparing it with conventional educational interventions, persuasive messaging, or alternative behavior change strategies to identify the distinctive advantages and benefits of employing the behavioral inoculation approach.
6. Broadening the scope of research to encompass diverse sample populations, including individuals from different age groups, cultural backgrounds, and socioeconomic statuses. This expansion would provide valuable insights into the applicability and generalizability of the findings across various populations.

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