



Education and Training

The Science of Resilience

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Definition

Heise and Meyer (2004, p. 325) define education as “programmes of learning with general objectives relating to the personal development of the learner and his/her acquisition of knowledge”. Education usually takes place in a formal, structured setting such as schools or other educational institutions (Heise & Meyer, 2004). In comparison to education, Heise and Meyer (2004, p. 325) clarify that “training is more directly related to the preparation of individuals for employment in current or emerging occupations”. Training can take place on-the-job as well as off-the-job and can include “applied learning, problem-solving skills, work attitudes, general employability skills, and the occupational specific skills necessary for economic independence as a productive and contributing member of society” (Heise & Meyer, 2004, p. 325).

Theories and Models

The Human Capital Theory

The human capital theory was originally developed to explain labour market success and was later used to explain differences in health and longevity. The human capital theory refers to the investments people make in gaining information, knowledge, and skills (Rogers, Hummer & Everett, 2013). According to this theory, one of the most important investments in human capital is education, which improves reading comprehension and contributes to more resourceful, effective, and efficient critical thinking, problem-solving, and decision making (Becker, 1994; Becker, 2005; Cutler, 2006; Mirowsky & Ross, 2003; as cited in Rogers, Hummer & Everett, 2013, p. 466). Specifically, increased education helps individuals acquire knowledge, develop higher self-esteem, and exhibit a greater sense of mastery, self-efficacy, personal control, and confidence (Rogers, Hummer & Everett, 2013, p. 466). Over time, the benefits of education accumulate because individuals can build upon their educational base to acquire new knowledge, learn from past mistakes, and understand and incorporate new findings into their lifestyle (Mirowsky & Ross, 2008; as cited in Rogers, Hummer & Everett, 2013)

Structurally, increased education can improve health and increase longevity through the accumulations of economic resources. To be clear, the human capital theory strongly suggests that higher income does not simply lead to improved health and lower mortality but rather highly educated people are more likely to use their higher-income to invest in their health and longevity (Mirowsky and Ross, 2003; as cited in Rogers, Hummer & Everett, 2013). Education also contributes to the building of stable forms of social support such as marriage, friendship, and ties to the community. These social resources can contribute to health and longevity through emotional, instrumental, and informational advice and support (House et al., 1988; as cited in Rogers, Hummer & Everett, 2013).

The relationship between education and health goes beyond income and social resources. More highly educated individuals are better able to effectively merge various habits together into a coherent lifestyle. For example, research indicates that highly educated people are more likely than less educated to frequently exercise and to refrain from smoking and heavy drinking (Cutler, 2006; Lantz et al., 2010; Pampel et al., 2010; as cited in Rogers, Hummer & Everett, 2013).

The Corporate University

The corporate university is a model for continuous training in the corporate world and continuous learning for employees (El-Tannir, 2002). Traditionally, the purpose of a corporate university has been determined by the need to train employees and to develop their general skills (El-Tannir, 2002). Specifically, a corporate university is a “function or department in [a] company that develops the skills for employees and integrates them into the strategic orientation of the corporation with a strong emphasis on leadership and improved work-related performance” (El-Tannir, 2002, p. 77).

Environmental and Sustainability Education

In his dissertation, Sterling (2010, p. 33) defines sustainable education as, “a change of educational culture which both develops and embodies the theory and practice of sustainability in a way which is critically aware. This would be a transformative paradigm which values, sustains, and realizes the human potential in relation to the need to attain and sustain social, economic, and ecological wellbeing, recognizing that they are deeply interdependent.” In this view, education is deeply influenced by the socio-cultural worldview or paradigm of society which affords the context within which education operates (Banathy, 1991; as cited in Sterling, 2010, 47). In more simplistic terms, environmental and sustainability education is “seen as an agent by which the development or more sustainable lifestyles can be achieved” (Sterling, 2010, p. 513). In this view, the assumptions about learning are linear: that raising awareness about environmental issues will lead to personal and behavioural change, and if followed in great enough number, to social change (Sterling, 2010, p. 513).

Benefits of Education and Training

Social Capital

Social capital refers to “the stock of active connections between people” (Johnston, 2004, p. 21; as cited in Murray 2009, p. 235). A 2004 study by Feinsten and Hammond found that adult education played a role in social capital and interest in civic activity (as cited in Murray, 2009). Similarly, Preston and Hammond (2003) reported that higher education influences relations with others through expanded social networks and encouraging tolerance (as cited in Murray, 2009).

Health and Well-Being

The positive association between education and health is well established. According to Bauldry (2014) college educated people maintain healthier lifestyles, have fewer functional limitations and are less likely to be disabled and suffer from chronic diseases, and have lower rates of mortality. When multiple indicators of socioeconomic status – such as education, income, occupational status - are considered, education often has the strongest effect on health outcomes (Hummer and Lariscy, 2011, Mirowsky and Ross, 2003, Williams, 1990; as cited in Rogers, Hummer & Everett, 2013).

Citizenship and Values

In their study, Milligan, Moretti, and Oreopoulos (2004) examined the relationship between voting and educational attainment to explore the association between schooling and civic participation. They found that in the United States, more educated citizens appear more likely to vote. When it comes to citizenship, values, and educational attainment, Preston and Green (2003) stated that there is strong evidence of a relationship between education and participation in the community at the individual level (as cited in Murray, 2009). Furthermore, the 2006 Australian Universities Community Alliance position paper states that active and knowledgeable citizens can drive social cohesion and societal change (as cited in Murray, 2009).

Crime Prevention

Enriched preschool programs, which include home visitation programs by nurses and educational daycare as well as preschool education programs for 3- and 4-year-olds have demonstrated long term effects of reduced need for school remediation, higher educational attainment, greater economic well-being, and reduced crime (Reynolds, Temple & Ou, 2009). In their study, Reynolds, Temple, and Ou (2009) found that high-quality preschool intervention can prevent crime by increasing educational attainment and addressing deficits in non-cognitive skills that are correlated with criminal activity. Other research, however, emphasizes the indirect relationship between educational attainment and crime through income. Where, through income, there is an indirect effect on crime and the possibility of a further indirect effect through parenting because crime tends to run in families (Feinstein, 2002; as cited in Murray, 2009).

Parenting

Parenting is a key factor in children's development. In their study, Bynner et al. (2002) suggest that parents who graduated from higher education appeared to supply the educational environment at home that educators would favour. Specifically, these types of parents were likely to have many more books than parents with lower educational attainment, they were

more likely to read to their children and their children tended to have superior scores on cognitive and behavioural tests (Bynner et al., 2002, p. 53).

Labour Market Participation

There is strong evidence that higher qualifications and skills significantly reduce the danger of spending a considerable part of one's working life unemployed (Heise and Meyer, 2004). Evidence also shows that the value of continuing education and training affects not only one's current career but that it also has a cumulative effect over the whole working life (Bukodi and Robert, 2002; Noguera et al., 2002; Becker and Schömann, 1999; as cited in Heise and Meyer, 2004, p. 359). As basic education and training determine access to higher and continuing education and training to a considerable extent, individuals with higher educational and vocational degrees have much better working career opportunities (Heise and Meyer, 2004, p. 359).

Transitions

According to Heise and Meyer (2004), research shows the beneficial impact of education and training on the success of the transition from education and training to work. In particular, low-skilled individuals have major disadvantages compared to other young people who have some kind of formal education and training (Bynner, 1994; Heinz, 1999; Starrin et al., 2000; as cited in Heise & Meyer, 2004). From a life course perspective, the impacts of the education and training system go beyond the success or failure of young's people's transition to their first job (Heise & Meyer, 2004). Specifically, "through the link between occupational factors, unemployment and employment, and social in-/exclusion, the educational system contributes to the quality and quantity of educational benefits throughout the entire life course" (Müller et al., 2002; as cited in Heise & Meyer, 2004, p. 361).

Lifelong Learning and Development

Today, the model of career development is one of continuous or lifelong learning (Fulmer & Gibbs, 1998). Individuals must commit to a lifelong process of learning and updating their knowledge (Fulmer & Gibbs, 1998). Much of this learning, however, is self-directed – individuals must look for ways of sharpening their knowledge and must develop the ability to learn more quickly (Fulmer & Gibbs, 1998).

Within competitive business markets and an ever-changing workplace, employee involvement in learning and development activities are increasingly important to both organizational effectiveness and employee success (Davenport & Prusak, 1997; Hall & Mirvis, 1995; Senge, 1990; as cited in Maurer, Weiss & Barbeite, 2003). In fact, learning and development activities may be associated with higher organizational commitment among employees, higher job satisfaction, and a greater probability of remaining in the workforce

(Mikkelsen, Saksvik, Eriksen, & Ursin, 1999; Lund & Borg, 1999; as cited in Maurer, Weiss & Barbeite, 2003).

Many studies have examined the factors that predict an individual's involvement in learning and development activities related to work. For example, Maurer, Weiss & Barbeite's (2003, p. 722) model results "depict a person who will be involved in development as someone who has been involved in such activities before, believes in the need for development and in his or her ability to develop skills, to receive intrinsic benefits from participating, and who perceives him- or herself as possessing learning qualities, as having social support at work and outside of work for development, as being job involved, and as having career insight". In a similar study, Hurts and Williams (2009, p. 650) found the largest effect on participation rates to be the "recognized availability of the activities, suggesting that organizations who offer such activities should make extra efforts to advertise and publicize the available opportunities to improve participation rates".

Relationship to Resilience

Literature on education for sustainability attempts to promote 'adaptive capacity' in the learner in the face of uncertainty (Sterling, 2010, p. 515). The notion of the 'resilient learner', popularized by Claxton (2002), links discourse on human development and resilience. In his conceptualization of the 'resilient learner' Claxton (2002; as cited in Sterling, 2010, p. 517) outlines and advocates four 'Rs' as follows:

- Resilience: being ready, willing, and able to lock on to learning
- Resourcefulness: being ready, willing, and able to learn in different ways
- Reflection: being ready, willing, and able to become more strategic about learning
- Relationships: being ready, willing, and able to learn alone and with others.

Notably, one key quality of a 'resilient learner' is the ability to stay intelligently engaged with a complex and unpredictable situation (Wells & Claxton, 2002, p. 28; as cited in Sterling, 2010, p. 517). Resilient individuals will be more inclined to take on learning challenges of which the outcome is uncertain, to persist with learning despite temporary confusion or frustration, and to recover from setbacks and failures (Wells & Claxton, 2002, p. 28; as cited in Sterling, 2010, p. 517).

Knowledge and learning are central concepts in the literature on social-ecological resilience and adaptive governance (Schultz & Lundholm, 2010, p. 646). Continuous learning and extensive knowledge are deemed crucial in building and maintaining social-ecological resilience and fostering sustainable development. Resilience literature focuses on learning that takes place in a multiple-loop fashion rather than the knowledge transfer of known facts (Schultz & Lundholm, 2010). While environmental education literature has mainly focused on learning that changes the knowledge, values, attitudes, and behaviour of people with a more

indirect influence on ecosystems in their roles as consumers, voters, and citizens (Schultz & Lundholm, 2010).

Career resilience can also be found at the intersection of education, training, and resilience. According to London (1983), career resilience is characterized as an “individual’s resistance to career disruptions in a less than optimal environment” (as cited in Fourie & Van Vuuren, 1998, p. 52). London’s (1983) definition of career resilience includes a behavioural component which encompasses the ability to: “adapt to changing circumstances, welcome job and organizational changes, embrace working with new and different people, exhibit self-confidence, and exhibit a willingness to take risks (as cited in Fourie & Van Vuuren, 1998, p. 54). From London’s (1983) perspective, the outcome of career resilience is the increased ability to cope with negative career experiences (Lyons, Schweitzer & Ng, 2015). Similarly, Fourie and Van Vuuren (1998, p. 53) define career resilience as “resilience, as it is applied and exhibited in the work environment”. Bimrose and Hearne (2012) argue that career-related resilience has been largely overlooked as a competency in modern careers, as career counselling intervention tends to focus on outcomes (e.g. career success) rather than on well-being and coping (as cited in Lyons, Schweitzer & Ng, 2015).

Interventions

The Adult-Youth Mentoring Program

Purpose

This study explored the relation of urban high school student attitudes toward school, work, and self-esteem beliefs to work-based mentoring, mentor satisfaction, and employment status using a longitudinal design (Linnehan, 2003).

The Program

As a component of its school-to-career initiatives, the Philadelphia school district established and manages a work-based, adult–youth mentoring program for students in its neighborhood high schools. Many of these schools primarily serve economically disadvantaged youth. At the beginning of the academic year, students are asked if they are interested in working with a mentor through the district’s program. The program requires the student to work at the mentor’s employer one or two days a week during the school year. Students are paid for the work they do and receive academic credit but do not receive a grade for their participation. To be eligible for the program, the students must meet minimum requirements of having a 2.00 GPA or better and a school attendance rate of 80% or better.

School district personnel solicit employers throughout Philadelphia and attempt to find a sufficient number of employment opportunities and mentors to meet student demand. Mentors volunteer to participate and attend a training program run by school district personnel

who identify the objectives of the program and discuss how to work with the students. At this training session, each mentor is shown how to complete an individual training plan to more closely link the student work experience to school. Student progress relative to this plan is monitored throughout the year. While district personnel decide which students to send for interviews with the mentors (based primarily on the proximity of the student to the employer's location), the mentors make the final selection from those students they interview. Due to an insufficient number of employment opportunities and adults who volunteer to participate in the program, not all students who want to work with a mentor are actually placed during the year. It had been the district's experience in previous years that many students who express a desire to participate, but who are not placed with mentors in the program, often find work on their own during the academic year (Linnehan, 2003, p. 44).

Participants

Two hundred and two students in grades 10 through 12 across 17 Philadelphia high schools were identified as participants for this study. All students had expressed a desire to participate in the district's program that year. The students were given and completed a survey during class time at the beginning of the 1999–2000 academic year.

Procedures

Of the 202 students who completed the initial survey, only 100 completed and returned the follow-up questionnaires at the end of the academic year. The follow-up survey asked the students if they worked with a mentor in the district's formal program that past year. Of those returning the second questionnaire, 15% had been placed with a mentor in the program. Student ID numbers were used by the district to verify the participation of these students. Students who indicated they were not placed with mentors in the district's program were asked if they had worked during the year and also asked the following question: "A mentor is someone at work who is older and you respect. Mentors give advice, are someone who you can talk with, who listens and wants to help you. If you worked at a job this past year, would you say you had a mentor?" If the students answered yes to this question, they were then asked to complete the same questions about their experiences with their mentors as those students who worked with a mentor in the district's program (Linnehan, 2003, p. 46).

The students were classified into four groups:

- Group 1: Students placed with mentors in the formal mentoring program.
- Group 2: Students who established an informal mentoring relationship with someone at work.
- Group 3: Students who worked, but reported they did not have a mentor.
- Group 4: Students who had not worked during the year.

Measures

- Self-esteem: Self-esteem was measured using 10 items from Rosenberg (1965). Responses were made on a seven-point scale, ranging from 'Strongly Disagree' to 'Strongly Agree'.
- Student's attitude toward work: A student's attitude towards work was measured using an eight-item scale developed by Stern et al. (1990). Responses to these items were made on a seven-point scale, ranging from 'Strongly Disagree' to 'Strongly Agree'.
- Student's belief in the relevance of school: A student's belief in the relevance of school was the mean of 10 items from Roy and Rosenbaum (1996). These items included positive measures of future relevance and items measuring the irrelevance of school. Responses were made on a seven-point scale, ranging from 'Strongly disagree' to 'Strongly agree'.
- Six items were also developed to measure the "protégé's" satisfaction with the mentor. For example: "I enjoyed being with my mentor," "I learned something from my mentor," and "I had a good time with my mentor." Again, responses to these items were made on a seven-point scale, 'Strongly disagree' to 'Strongly agree'.

The Creating a Peaceful School Learning Environment (CAPSLE) Initiative

CAPSLE is an intervention that integrates addressing the relationship between the bully, the victim and the bystander (Fonagy et al., 2005). The intervention addresses children, school employees, volunteers, and parents. According to Fonagy et al (2005, p. 319) the four components of CAPSLE are as follows:

- A positive climate campaign uses reflective classroom discussion, counselor-led lessons, posters, magnets, bookmarks, and other devices to encourage a shift in language (and thinking) of all students and personnel. These language tools help identify and resolve problems that occur, for example, children help each other resolve issues without adult participation. Such effects are observed as they share playground equipment peacefully, and do not push and jostle in the lunch line.
- A classroom management plan assists teachers' discipline skills by focusing on understanding and correcting the root problems rather than on punishing and criticizing the behavior. For example, a behavior problem in a single child is conceptualized as a problem for the whole class who, often unwittingly, participate in bully victim or bystander roles. Scapegoating is thereby reduced and insight into the meaning of the behavior becomes paramount.
- A physical education program derived from a combination of roleplaying, relaxation, and self-defensive techniques, teaches children skills to handle victimization and bystander behavior. This program helps children protect themselves and others with non-aggressive physical and cognitive strategies For example; enacting bully-victim-bystander roles provides students with alternative actions to fighting. Learning ways to physically defend oneself (e.g., when grabbed, pushed, or punched) coupled with

classroom discussion, teaches personal self-control as well as respect and helpfulness toward others.

- Schools may put in place one or two support programs: peer mentorship or adult mentorship. These relationships provide additional containment and modeling to assist children in mastering the skills and language to deal with power struggles. For example, mentors instruct children in refereeing games, resolving playground disputes, and the importance of helping others.

Participants

- A total of 2,206 students participated in this study.
- The CAPSLE group consisted of 1,106 students. The majority of students were white (58.4%), 23.3% were African American, 14.2% were Hispanic, 3.1% Native Americans and 1.1% Asians and ages ranged from 7 to 14 years old. Further, the majority of students (59.4%) received free or reduced-price lunches.
- The comparison group consisted of 1,100 students whose gender; ethnicity, age, lunch-program status, and first year for which test scores were available matched the program student's characteristics.

Procedures

- School staff implemented the program with support from a consultation team led by the first three authors (Fonagy, Twemlow & Vernberg). Teachers, counselors, and building administrators took primary responsibility for the positive climate campaign and the classroom management plan. The physical education program included 12 sessions delivered once weekly during regular physical education time. These sessions were co-taught by the physical education teacher and a martial arts specialist. School counselors or social workers coordinated and supervised the peer mentor or adult mentor program.

Measures

- Fonagy et al (2005) also compared participants' achievement test scores before and after program implementation.
- Academic achievement: Academic achievement was measured using the Metropolitan Achievement Test (MAT7), which is routinely administered to students in grade 3 and 5. Specifically, The MAT is a comprehensive battery of tests designed to measure school achievement across the domains of reading (word recognition, reading vocabulary, reading comprehension), mathematics (concepts and problem solving and mathematical procedures), written language (composition, editing), science, social studies, research and thinking skills (Fonagy et al., 2005, p. 320).

The Youth Opportunities Program

Purpose

The objective of this study was to determine whether a mental health intervention, integrated into an employment training program that serves adolescents and young adults disconnected from school and work, can reduce depressive symptoms and improve engaged coping strategies (Tandon et al., 2015).

Participants

A total of 782 youth, aged 16 to 23 years, participated in the study - 512 were intervention participants while 270 were enrolled in the comparison group.

The Program

In Baltimore, Maryland, there are two Youth Opportunities (YO) sites – Eastside YO and Westside YO. Specifically, these centers provide comprehensive social and educational services, including General Education Development certification classes, support for college enrollment, resume building, career development resources, and job placement. Initially funded by the US Department of Labor, YO centers serve communities with pervasive poverty, high unemployment rates, and general distress characterized by high dropout rates and several other negative social, health and economic indicators (Tandon et al., 2015, p. 32).

Procedures

For the purpose of this study, Eastside YO program enrollees received a multicomponent intervention aimed at improving mental health status— Healthy Minds at Work, which consisted of (1) mental health training for YO program staff; (2) audio computer-assisted self-interview (ACASI) mental health screening at the time of program enrollment to determine the level of need for mental health services; (3) psychoeducational workshops (eg, anger management, coping with stress) both integrated into the employment training curriculum and conducted as freestanding sessions; and (4) on-site mental health services provided by 2 full-time licensed clinical social workers and, as needed, a psychiatrist to provide medication management (Tandon et al., 2015, p. 32). All YO enrollees, regardless of baseline mental health status, were eligible for psychoeducational workshops and on-site mental health services. Enrollees with moderate depressive symptoms were eligible for a peer-led depression prevention group, while enrollees with moderate and high depressive symptoms were recommended to engage in a minimum of 8 one-on-one cognitive behavioral therapy (CBT) sessions with the on-site clinical social worker. These CBT sessions lasted 45 minutes and focused on enhancing understanding of how behavior, thoughts, and emotions act in concert and providing effective ways of behaving and thinking in response to stressful situations.

Westside YO enrollees received the ACASI screening and initial visit with an on-site mental health clinical social worker. However, the Westside clinical social worker worked only 20 hours per week, limiting availability for follow-up visits (Tandon et al., 2015, p. 32).

Measures

- Baseline ACASI's were conducted at the time of program enrollment.
- Participants were given \$20 cash for completing the 6- and 12-month follow-ups.
- Depressive symptoms: Depressive symptoms were measured using the CES-D, a 20-item self-report instrument widely used in depression research with adolescents and young adults.
- Coping: The Children's Coping Strategy Checklist-Revision 1 assessed domains of coping such as active coping, support seeking, and distraction.
- Anxiety: Beck Anxiety Inventory
- Life stressors: Life Events Scale

Universal Preventive Interventions

Purpose of the study

To examine how exposure to either the CC or the FSP intervention in first grade affected standardized test performance in high school, teacher-rated academic achievement, special education service use, high school graduation, and college attendance (Bradshaw, Zmuda, Kellam & Ialongo, 2009).

Participants

A total of 678 children from 27 classrooms in nine Baltimore City public schools participated in the study, however, only 574 youth consented to a Grade 12 assessment. Participants were enrolled in one of three groups: the CC intervention group, the FSP intervention group, or the comparison group.

Interventions

Classroom centered intervention (CC)

- Addresses both sets of early risk behaviours
- Represents a combination of behaviourally focused classroom management program called the Good Behaviour Game by Barrish et al (1969)
- The intervention was designed to reduce the early risk behaviors of poor achievement and aggressive and shy behaviors through enhancements to the curriculum, improvements in teacher instructional and classroom behavior management practices, and specific strategies for children who were not performing adequately (Bradshaw, Zmuda, Kellam & Ialongo, 2009, p. 927)
- The intervention included the following components:

- An interactive read aloud component
- Journal writing activities
- A dramatic presentation of a written work in a script form, including expressive voices and gestures which sought to enhance compositional and reading skills
- Critique of the Week: In which uses the context of images and resources from the students' daily life to teach students to examine the content, to look at the way they think, and to formulate their own position with a system of value and reasoning. This exercise enhanced critical thinking skills.
- The Mimosa math curriculum augmented the existing math curriculum and featured a whole-language approach to promoting math skill development.
- The Good Behavior Game by Barrish et al., 1969 was used to improve classroom behaviour management practices.

Family-School Partnership (FSP)

- Designed to improve collaboration between parents and teachers or school mental health professionals by enhancing parents' teaching and behavior management skills
- Parents workshops were intended to establish a relationship between the parents, school, and staff.
- Workshop 1 "Read Aloud": Teachers shared with parents the benefits of reading aloud to their children along with strategies to enhance the experience. Each week, parents would be loaned a different book to read aloud to their child.
- Workshop 2: The second workshop focused on "Fun Math" activities developed by the University of California at Berkeley's Family Math program.
- Workshops 3-8: Focused on effective disciplinary strategies. The series was led by the school psychologist or social worker and covered topics that included effective praise, play, limit setting, time-out versus spanking, and problem solving. Parents observed a series of videotapes of modeled parenting skills. After viewing each vignette, the leader paused the videotape and asked open-ended questions about the scenes (Brashaw, Zmuda, Kellam & Ialongo, 2009, p. 930).
- At each session, parents were asked to fill out and return comment sheets indicating whether they had completed the assigned weekly home learning activities.

Measures

- Externalizing behaviour problems: The Teacher Observation of Classroom Adaptation—Revised (TOCA-R) by Werthamer-Larsson, Kellam, & Wheeler, (1991) was administered in the fall of the first grade to student's teachers. Specifically, the TOCA-R provides a brief measurement of each child's performance on core tasks in the classroom.
- Educational achievement: The Kaufman Test of Educational Achievement developed by Kaufman (1985) was used to assess student's school achievements from Grade 1 to 12.

- Teacher rated academic performance: To measure behaviour and academic performance, the Teacher Report Behaviour Checklist (Grades 6-12) developed by Jalongo et al. (2001) was administered.
- Special education service use: Data were obtained from the district to determine whether the participant had an individualized education program.
- High school graduation: Data were obtained from the district to determine whether the participant had graduated from high school or passed the GED test.
- College attendance: At age 19, participants were asked whether they had attended college.

Resilience Training for Female Police Officers

The intervention included a total of 20 hours of group sessions - three 1.5 hour sessions were held each week for a period of approximately two months – at the in-service training center in police premises (Chitra & Karunanidhi, 2018). The program was delivered in Tamil, as the participants were not proficient in English language.

The training program used an experiential approach which included psychoeducation, reflection, role-playing, modeling, self-monitoring of responses, and image-guided relaxation. Practice of skills and homework in between sessions was emphasized to the participants. At the beginning of every session, the trainer reviewed the learning of the previous session. The trainer also checked their adherence to the homework assignments. At the end of every session, the trainer gave last 10 minutes to the participants to reflect on their learnings. The trainer motivated the participants to realize and reflect on the experiences and not just intellectually learn from the program.

Measures

- Occupational stress was measured using the Occupational Stress Inventory (OSI) developed by Karunanidhi and Chitra (2014a). It is a 71-item scale which measured various sources of occupational stress of female police officers. It has six dimensions namely, operational hassles, external factors, hazards of occupation, physical working conditions, women-related stress, and supervisory stress (see Appendix 1). Four-point Likert Scale (0–3) was used as response scale, with higher scores reflecting high occupational stress. The scale exhibited construct validity with the sample of 1583 female police officers in a study conducted by Karunanidhi and Chitra (2014a). The scale has been tested in the police population and has demonstrated good internal consistency which ranged from $\alpha = 0.85$ to 0.93 in the current study.
- Chitra & Karunanidhi (2018) chose Connor-Davidson Resilience Scale (CD-RISC), by Connor and Davidson (2003), to measure resilience. CD-RISC is a self-report measure composed of 25 items, each rated on a 5-point scale (0–4), with higher scores reflecting

greater resilience. A time frame of 1 month was used to measure the items of this scale. The internal consistency of the scale for the current study was $\alpha = 0.87$.

- Job satisfaction was measured using global scale of job satisfaction, namely, overall job satisfaction scale (Brayfield and Rothe 1951). The original scale consisted of 18 items, with Likert scale ranging from 4 (strongly agree) to 0 (strongly disagree). For the present study, a few modifications were made to the original scale to suit the Indian population. The scale with similar modifications (14 items) was tested for internal consistency in a sample of 1570 female police officers and the resulting Cronbach Alpha was 0.89. The internal consistency of the job satisfaction scale for the current study was $\alpha = 0.87$.
- Psychological well-being was assessed using, The Psychological General Well-being Index (PGWBI) by Dupuy (1984). The items were rated on a four-point Likert scale which is different for each item, ranging from 0 to 3. We used it as the tool focuses on positive aspects of well-being and avoids relationship to specific conditions or physical symptoms, and it has a general utility with a range of populations from psychiatric cases to healthy individuals. PGWBI is a 22 item measures and has six dimensions namely anxiety, depressed mood, positive well-being, self-control, general health, and vitality. The original response option of the PGWBI was six, and it was modified to four, to enhance the understanding of the respondents. The changes made to PGWBI were approved by five experts in the field of psychology. The internal consistency of the PGWBI ranged from $\alpha = 0.64$ to 0.94 for the current study.

Stress Management and Resilience Training Among Department of Medicine Faculty

The study was designed as a randomized, wait-list controlled, pilot clinical trial enrolling 40 Mayo Clinic Rochester physicians (Sood, Prasad, Schroederm & Varkey, 2011). Prior to receiving the intervention, participants completed the following validated instruments: Connor-Davidson Resilience Scale (CD-RISC), Perceived Stress Scale (PSS), Smith Anxiety Scale (SAS), Linear Analog Self Assessment Scale (LASA), and Visual Analog Scale-Fatigue (VAS-Fatigue).

The study intervention was a single 90-min session training in the SMART program. The SMART program has been adapted from Attention and Interpretation Therapy (AIT). AIT is a structured therapy developed at the Mayo Clinic to decrease stress and enhance resilience. AIT addresses two aspects of human experience, attention and interpretation. Research suggests that human attention instinctively and inordinately focuses on threats and imperfections.^{24,25} Since a considerable amount of threat exists within the domains of past and future, attention gets engaged in the psychological frame of time. This predisposes to excessive thinking, ineffective efforts toward thought suppression, and avoidant response.^{26–28} AIT guides learners to delay judgment and pay greater attention to the novelty of the world. Complementing attention training is instruction to help participants direct their interpretations away from fixed prejudices toward a more flexible disposition while cultivating skills such as gratitude, compassion, acceptance, forgiveness, and higher meaning.

Participants were also provided training in a brief structured relaxation intervention (paced breathing meditation). In this program, participants were taught to practice deep diaphragmatic breathing at five breaths per minute for 5 or 15 min, once or twice a day. Participants were also offered an optional 30–60 min follow-up session depending on individual needs.

Assessment

Attitudinal and Motivational Antecedents of Participants in Voluntary Employee Development Activities (Hurtz & Williams, 2009)

On-job-experiences

- “How often have you taken on work projects, assignments or tasks that required you to learn new knowledge or skills?”
- “How often have you swapped or rotated assignments with other employees so that you would be more well-rounded in the types of tasks you are carrying out?”
- Measured on an 8-point scale that asked for either a number of acts 0 (never) to 7 (7 or more) or a more verbal frequency statement such as 0 (never) to 7 (about once per day or more)

Formal courses and programs

- “How many on- or off-site training courses or workshops did you participate in, in order to improve or learn new knowledge or skills for your job?”
- “How often have you spent your own time outside of work reading books or periodicals, browsing the internet, or engaging in other similar activities to help stay current or get ahead in your line of work?”
- Measured on an 8-point scale that asked for either a number of acts 0 (never) to 7 (7 or more) or a more verbal frequency statement such as 0 (never) to 7 (about once per day or more)

Professional relationships

- “How often have you worked with a formal mentor or coach to help ‘show you the ropes’ and develop your job-related knowledge and skills?”
- “How often have you ‘networked’ and made efforts to meet people in the organization who could help you to achieve your job- and career-related goals?”
- Measured on an 8-point scale that asked for either a number of acts 0 (never) to 7 (7 or more) or a more verbal frequency statement such as 0 (never) to 7 (about once per day or more)

Availability of activities

- “In the past year, how available were the following activities or experiences?”
 - Employee assessments
 - Supervisor/boss feedback
 - Coworker/subordinate feedback
 - Client/recipient feedback
 - Self-assessment
 - On-the-job-experiences
 - New projects/assignments
 - Job rotation
 - New responsibilities
 - Transfer/promotion
 - Formal courses
 - On/off site training courses
 - College courses
 - Meetings/conventions
 - Spent own time reading
 - Professional relationships
 - Received coaching/mentoring
 - Called on experienced employees
 - Worked with supervisors/coworkers
 - Networking
- Items were measured on a 5-point scale ranging from 0 (never available to me) to 4 (always available to me)

The Career Resilience Questionnaire

Fourie and Van Vuuren (1998) utilized the Career Resilience Questionnaire in order to measure individual responses to a variety of work and career situations. Specifically, the questionnaire encompassed 60 items of which 23 were reversed scored. Each item in the questionnaire was measured on a seven-point scale ranging from ‘Not at all’ to seven ‘To a great extent’. The questionnaire also included biographical questions relating to the participant’s career history.

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Other possible resources

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