



Research article

Effects of Kibbutz communal upbringing in adulthood: trait emotional intelligence and attachment patterns

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ARTICLE INFO

Keywords:

Psychology

Kibbutz

Emotional intelligence

Attachment

Late adulthood

Communal sleeping arrangement

ABSTRACT

Past research regarding the emotional characteristics of kibbutz children raised with communal sleeping arrangements (CSA) showed inconsistent findings for emotional difficulties, such as insecure attachment and lowered ability for intimacy. Only little research has examined these children's emotional characteristics in their adulthood. Trait emotional intelligence (trait EI) is a new concept measuring a constellation of correlated emotional traits that capture a person's typical way of processing emotional information and reacting to it.

The present study examined if difficulties in intimacy and trait EI characterize adults who had been raised in CSA kibbutzim (Hebrew plural of kibbutz). Participants comprised 1185 adults, aged 30–79, of whom 735 were raised in CSA kibbutzim, and the rest did not grow up in a Kibbutz at all. The participants completed three self-report questionnaires: Schutte's Self-Report Emotional Intelligence Test (SSEIT) to measure trait EI; the Revised Adult Attachment Scale to measure adult attachment; and the Rosenberg Self-Esteem Questionnaire to measure self-esteem.

Results showed that most of the kibbutz CSA participants revealed levels of intimacy and trait EI comparable to the non-kibbutz group. However, a significant difference was found among adults with low self-esteem and poor attachment quality: For these participants, trait EI and intimacy were significantly lower for the CSA kibbutz group than for the non-kibbutz group. Furthermore, the CSA kibbutz group reported poorer non-verbal communication skills than the non-kibbutz group.

We suggest that a minority of the CSA kibbutz children were less resilient to the kibbutz ecology. These children might have been more vulnerable to the effects of limited social options, decreased parental support, and the kibbutz education's ideological demands. For these children, the effects of communal upbringing on intimacy and attachment appear to be long-lasting, extending throughout their adulthood.

"In the social experiment in which I participated, you always had to adjust yourself to others. You could not be unique and special; you could not express your own needs, but rather had to be a 2-year-old socialist, a 10-year-old socialist, and a 15-year-old socialist. To be 'a good kid' meant to conform to a lifestyle forced upon you without being asked for your opinion or desires" (Balaban, 2000).

1. Introduction

Subsyndromal psychopathology indicates well-functioning individuals with minor subthreshold symptoms of depression, anxiety, and other psychological difficulties (Meeks et al., 2011; Bylsma et al., 2011). Such latent pathology is also typically associated with a tendency to

repress and deny distress (Cohen, 2013). These difficulties appear to be associated with attachment patterns (Fonagy, 2018) and trait emotional intelligence (trait EI; Petrides et al., 2016) that begin to formulate from early childhood. Some collectivistic societies — societies that emphasize solidarity, selflessness, cooperation, and group cohesion and generally focus on group goals over personal desires — tend to implicitly encourage their members to put a reduced emphasis on personal adversity, and even at times, repress or deny personal difficulties (Triandis, 2018).

Collective-socialist ideology was dominant in the Soviet Union and the Eastern Bloc and in Israeli communities called "kibbutzim" (Hebrew plural of "kibbutz") during the 20th century. Most Israeli kibbutzim practiced a radical collective childrearing tradition, where the children

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<https://doi.org/10.1016/j.heliyon.2020.e05775>

Received 23 August 2020; Received in revised form 6 November 2020; Accepted 15 December 2020

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were raised communally, spending only limited hours each day with their parents, and sleeping communally in a separate children's home without their parents (Lieblich, 2010). Whereas this "social experiment" (Gavron, 2000) ended in the 1990s, this study sought to examine some of the implications of this social experiment and observe attachment and trait-EI patterns of these individuals, who are now adults or elderly individuals.

To imagine collective kibbutz child-rearing, picture a baby in her first year of life sleeping in a communal Kibbutz children's home, with many other infants, a distance away from her parents' home. In the middle of the night, the infant wakes up due to hunger or cold, and she finds herself alone. She becomes anxious and cries, but her mother or father does not come. At first, as no one responds to her cry, her anxiety intensifies, and her cries increase in volume. Only after about 10 min, a strange face and voice present themselves. The infant refuses to be comforted. Eventually, the crying wears the infant out. She eats a bit and falls asleep. This episode repeats itself almost every night during her infant years.

Does this experience in infancy leave a mark on the infant's personality? Does this impression affect the infant for several decades?

In addition to the extraordinary experience in infancy, young kibbutz children continue to develop within "a comprehensive social experiment" (Aviezer et al., 2002), which might leave another mark on their personality. Kibbutz society requires adolescents to adhere to its unique values and intensively integrate into their closed age group. This considered, the psychological patterns of young kibbutz children have aroused broad research interest and have been examined in various studies, most of which were conducted in the second half of the 20th century. Some of these studies suggested that moderate emotional difficulties characterize kibbutz children and youth (Aviezer et al., 2002; Sharabany and Wiseman, 1993). Two different theoretical models have offered explanations for these emotional difficulties (Ebenstein et al., 2018), with each model suggesting a different prognosis for the emotional development of these kibbutz children in adulthood. In the psychoanalytic model, the emotional difficulties observed in kibbutz children are the product of the communal upbringing characteristic of the kibbutz; this is an upbringing lacking in coherent and continuous attachment figures. This model assumes that these childhood difficulties come together and form a permanent and continuous personality pattern that will moderately characterize kibbutz children throughout their lives. An alternative explanation, the ecological model, suggests that young kibbutz children's emotional difficulties are the ephemeral products of the kibbutz's social conditions. According to this explanation, when a young kibbutz member turns 18 (i.e., when he/she begin their mandatory national army service and leave the kibbutz education system), the unique social conditions of the kibbutz become discontinued and, therefore, the emotional difficulties that come with the communal kibbutz upbringing are discontinued, as well.

Most of the emotional difficulties observed in young kibbutz children have yet to be examined in their *adulthood*. Indeed, the study of CSA education in kibbutzim has been quite dormant and neglected in the new millennium, likely due to the cessation of CSA policy in kibbutzim from the 1990s. Today, years later, we can examine whether adults raised in CSA conditions display unique emotional difficulties, decades after they graduated from their kibbutz upbringing. This is the aim of this study. First, we present some core elements regarding CSA and kibbutz education that appear pertinent to the emotional traits examined in this study.

1.1. The Kibbutz, Kibbutz education, and communal sleeping arrangements

Since its establishment, the kibbutz movement has strived to maintain a cooperative, egalitarian, exemplary society, which operates out of mutual responsibility and solidarity among its members (Kibbutz Artzi Regulations, 1973). As a communal society, the kibbutz was perceived by its members as having supreme authority and responsibility for the

education of its children. Hence, parental authority was subordinate to the educational personnel of the kibbutz (Lieblich, 2010).

The kibbutz's educational establishment sought to create an ideological commitment to the values of equality and cooperation among the kibbutz children while constraining the pursuit of individual aspirations (Spiro, 2004). In practice, a caregiving staff was responsible for tending to the children during the day, whereas a rotating woman-on-duty watched the children throughout the night. These rotating "night guards" were women with whom the children were not closely familiar. Kibbutz children met with their parents and siblings for only a few hours in the afternoon and on Saturdays and holidays (Weiss and Shilkret, 2010).

Alongside the communal sleeping arrangements, education of the kibbutz children included four essential characteristics (Ebenstein et al., 2018), which distinguished it from normative education:

(a) A dual focus on the collective and the family:

The far-reaching diminution of the family's role and sleeping outside of the family home, led to a weakening of the family's influence and strengthening of the collective's influence on the child. Whereas the kibbutz educational establishment played a primary role in education and discipline, the parents' home was perceived as a place that permitted emotional and supportive expression (Richman, 2004). Kibbutz children learned to distinguish between the performance-oriented and mission-driven guidance they received from the kibbutz's educational establishment personnel and the unique emotional and personal treatment he received from his parents. Regev (1976) claimed that kibbutz children were compelled to accustom themselves to two distinctly different worlds having entirely different emotional and social codes, with this duality producing a split in the kibbutz member's reality and upbringing.

(b) The centrality of the age group:

The centrality of a child's age group in the kibbutz was enhanced by the long hours the group spent together in the children's communal home and by the family's relatively minor role in their upbringing. The child was affiliated with only a single age group, and this group remained constant throughout the years of the child's upbringing, even when houses, caregivers, and teachers may have changed. Thus, this age group's centrality brought about an over-tendency toward social conformity among its children (Ebenstein et al., 2018). For example, a study analyzing young kibbutz children's self-report questionnaires (Tubin, 1978) revealed lower levels of autonomy and separation from their peers than did city children. Tubin suggested that this distinction can be attributed to the relatively high co-dependency kibbutz children shared with their peers.

(c) Ideological Uniformity:

The family, the caregivers, the educational establishment, the school, and the kibbutz members created a multi-dimensional, comprehensive and unified ideological paradigm (Lieblich, 2010). One goal of this paradigm was to impart kibbutz values, thus deterring children from individual expression and encouraging them to develop in accordance with the group's values (Gaunt and Bassi, 2012).

(d) Prioritizing the needs of the collective before the needs of the individual

Kibbutz education aspired to educate its children to prioritize the social, economic, and ideological needs of the kibbutz rather than the individual's desires. Furthermore, as early as high school, kibbutz adolescents were integrated into adult work frameworks and were assigned roles with significant responsibility (Avrahami, 1998). The adolescents'

perception of their participation was strengthened by their awareness of the kibbutz mission and of the high value attributed to kibbutz work. Taking an active role in advancing the kibbutz further facilitated the kibbutz children's identification with the kibbutz's needs and values. Avrahami also explained that the kibbutz's prioritizing academic education that would contribute directly to the kibbutz lifestyle (e.g., education, engineering, agriculture) constrained the individual's prospects to think, aspire, and direct energies toward self-actualization.

Initially, kibbutz educators sought to develop individualism, innovation, freedom of thought, self-actualization, and creativity among kibbutz children (Dror, 1995). However, the kibbutz also aimed to transform kibbutz children into "ideological replicas" of the kibbutz's founding generation to assure the continuity of the kibbutz view of utopian society (Lamdan, 2004). All of the noted elements left a potential mark on the personality formation of kibbutz children and, in particular, on their attachment characteristics and emotional intelligence.

1.2. Attachment theory

Attachment theory (Bowlby, 1980) asserts that human infants are born with various behaviors intended for seeking closeness with their caregivers. These behaviors stem from an inborn psycho-biological system aimed at regulating stress and anxiety and protecting the individual from physical threats. The quality of this attachment system is dependent on the consistent availability of an attachment figure (Fonagy and Luyten, 2018), especially in infancy and early childhood. Good infant attachment was found to correlate significantly with numerous positive personality traits throughout the lifespan. For example, higher infant attachment quality was positively associated with lower rates of depression, neuroticism, and substance abuse in adulthood, as well as with higher levels of well-being, ego strength, and better social functioning in adulthood (Mikulincer and Shaver, 2020).

After Bowlby (1980) conceptualized and explained the difference between secure attachment and insecure attachment, Ainsworth (1967) expanded these terms and developed the categorization and measurement of attachment types in infancy using the *Strange Situation Procedure*. Ainsworth classified infant attachments styles as *secure*, *insecure-anxious*, and *insecure-avoidant*. Later, a fourth attachment style was conceptualized termed *insecure-disorganized* (Granqvist et al., 2017).

A more updated conceptualization and measurement method of attachment styles categorizes attachment on two axes: anxiety and avoidance (Mikulincer et al., 2003). The anxiety axis reflects the extent to which the individual worries that their attachment figure will not come to their aid in times of distress. The avoidance axis reflects the individual's desire to maintain emotional distance and eschew dependence on the attachment figure due to a lack of trust. Some relate to the avoidance axis as comprised of two elements: *dependency avoidance* (i.e., an individual's desire to avoid dependence on another individual) and *closeness avoidance* (i.e., an individual's desire to avoid intimacy with another individual).

Whereas assessment of attachment in infancy derives from behavioral observation, its measurement in adulthood is based on interviews or self-report questionnaires (Roisman et al., 2007). See Roisman et al. for a more extensive discussion of the axis categorization and the Strange Situation procedure and for the various ways to conceptualize and measure attachment styles.

More recent views and findings suggest that relationships with a group can also function as an attachment relationship (Fonagy et al., 2017); the individual can use a group as a secure base and seek intimacy with the group members as a source of security, support, and comfort in times of distress.

Longitudinal research examining attachment stability showed inconclusive results (see Specht et al., 2011). In general, attachment style appears to be moderately stable from infancy to early adulthood

(Pinquart et al., 2013; Fraley, 2002), with greater stability into adulthood (Chopik et al., 2019). However, family conflict, marriage or divorce, dramatic career changes, and other pivotal events throughout life may undermine this stability, among adults.

1.2.1. Research on the attachment patterns of Kibbutz children

Communal sleeping arrangements were discontinued in Kibbutzim in the early 1990s, and studies concerning this practice were mostly conducted prior to the century's turn. An early study showed that the percentage of kibbutz infants with secure attachments to their mothers (59%) was lower than the percentage of non-kibbutz infants having secure attachments to their mothers (65–70%; Sagi et al., 1985). A more focused study (Sagi et al., 1994) compared kibbutzim having communal sleeping arrangements (CSA) with kibbutzim having familial sleeping arrangements (FSA) and found a significant difference in the percentage of infants with secure attachments to their mothers: Fewer CSA kibbutzim's infants (48%) enjoyed secure attachments to their mothers than those of FSA kibbutzim (80%). The percentage of FSA kibbutzim infants with secure attachments was comparable to that of city-raised Israeli infants (Maysel and Scher, 2000).

Another study (Sagi et al., 1997) examined the intergenerational transfer of attachment patterns from mother to infant. Findings showed a comparable proportion of CSA kibbutzim mothers with secure attachments (to their mothers) and FSA kibbutzim mothers. However, the percentage of infants with secure attachments to their mothers was lower for CSA kibbutzim (40%) than for FSA kibbutzim (76%). The researchers suggested that CSA might disrupt the intergenerational transfer of attachment patterns and that the lack of the mother's availability at night overshadows her sensitivity and availability to her infant during the day, thus leading to insecure attachment. An additional study showed that the level of motherly sensitivity in CSA kibbutzim was unrelated to their children's level of attachment security (Aviezer et al., 1999). The Aviezer et al. finding differed from reports in research on FSA kibbutzim and those revealed in research internationally (Cassidy and Shaver, 1999), where a positive correlation was found between motherly sensitivity and secure attachment. Aviezer et al.'s findings appear to strengthen the hypothesis that CSA kibbutz upbringing damage the quality of infants' attachment to their mothers.

The percentage of secure attachments of infants to their *fathers* in CSA kibbutzim was found to be similar to that of other populations (Sagi et al., 1985), with kibbutz children showing no preference for either of the parents. Sagi et al. also examined the attachment quality of 2-year-old kibbutz infants to their mother, father, and their kibbutz-non-parent-caregiver, three and a half years later. van Ijzendoorn et al. (1992) followed up on the same children at age 5, measuring their IQ and socio-emotional functioning through observations and questionnaires. The van Ijzendoorn et al. study found that the children's level of secure attachment toward their non-parent caregiver at age 2 was the best predictor of empathy levels, IQ, social independence and social dominance at age 5. In contrast, attachment quality to the mother (in infancy) did not predict these variables at age 5. Thus, according to van Ijzendoorn et al. (1992), these findings point to the importance of the non-parent caregiver in the emotional world of the kibbutz child and the relatively weak importance of the emotional relationship kibbutz children have with their parents.

Aviezer and Sagi (1999) analyzed the emotional characteristics of early adolescent kibbutz children, comparing their results with their scores from the Strange Situation procedure they underwent in infancy. This study found that CSA kibbutz children that had displayed insecure attachments to their mothers during infancy, were characterized - in their adolescence - as being less emotionally mature and tended to express a narrower range of emotions. The researchers emphasized the negative effects of CSA kibbutzim on their children's attachment patterns and other emotional characteristics.

1.3. Trait emotional intelligence

Trait Emotional Intelligence (*trait EI*) is a constellation of correlated emotional traits that capture a person's typical way of processing emotional information and reacting in emotional situations (Petrides et al., 2007). Trait EI is measured through self-report questionnaires and concerns individuals' perceptions of their emotional abilities, such as how effective they believe they are in understanding, regulating, and expressing emotions to adapt to their environment and maintain well-being (Petrides et al., 2007).

Research shows that trait EI is positively and strongly related to a sense of life satisfaction and positive social connections (Petrides et al., 2016). Trait EI has been found to be inversely related to various psychopathologies, such as depression, alexithymia, and anxiety among adults, adolescents, and children (Sarrionandia and Mikolajczak, 2020; Kokkinos and Kipritsi, 2012). Trait EI has also been found to be a good predictor of low rates of physical health issues (Mikolajczak et al., 2008), higher marriage satisfaction, and more positive attachment styles (Malouff et al., 2014). Physiologically, trait EI has been shown to be related to a variety of positive neurological measures, such as cortisol secretion while coping with stressful situations (Mikolajczak et al., 2007), and a higher quantity of gray matter in the brain (Tan et al., 2014).

Trait EI has shown stability for periods of three years (Lewis et al., 2017), and for 32 months (Parker et al., 2005) among Western college students. A longitudinal study on Canadian children aged 10–18 showed trait EI stability from age 13 to 18. To the best of our knowledge, the stability of trait EI has yet to be studied beyond three years.

1.3.1. Research on the Trait-EI of communally raised individuals

Trait EI of communally raised individuals (whether in Israeli Kibbutzim or other communes worldwide) has not been studied to our knowledge. This lack of research is understandable since CSA practices in Kibbutzim were discontinued in the early 1990s when the term trait EI had yet to be conceptualized. Despite this lack of current research, some relevant findings have been reported. Schulze and Roberts (2005) described emotional openness and emotional expression as naturally related to high trait EI levels. Past research conducted in the 1980s, before the cessation of CSA, found that kibbutz-raised adolescents expressed limited emotion in the Thematic Apperception Test (Biran, 1983), limited emotional expression (Armon, 1980; Regev et al., 1980), and lower general emotional openness (Biran, 1983; Bitan, 1978).

Furthermore, emotional intimacy was found to be related to relatively high levels of trait EI (Malouff et al., 2014), and several studies in the 1980s found lower levels of intimacy among kibbutz children (Armon, 1980; Sharabany and Yariv, 1986). Other research on kibbutz-raised adults found their intimacy levels comparable to those of city-raised adults, whether in platonic relationships with partners of the same sex (Wiseman and Lieblich, 1991) or in romantic relationships with partners of the opposite sex. Other research shows lower levels of intimacy between fathers raised in CSA kibbutzim and their daughters, compared to city-raised fathers (Sharabany and Yariv, 1986).

1.4. The current study

1.4.1. Trait EI

Based on previous findings showing lower levels of intimacy, emotional expression, and self-disclosure among kibbutz children, we posed the following hypothesis:

H1. Adults raised in CSA kibbutzim will present lower levels of trait EI than will non-kibbutz-raised adults.

1.4.2. Attachment and closeness

For adults raised in CSA kibbutzim, many years have passed since their childhood in the kibbutz education system, and it is clear that their

social environment and peer group have significantly changed since their childhood on the kibbutz (whether they remained in the kibbutz or moved to the city) and have affected their attachment patterns in some way. Since attachment patterns show moderate stability across the life-span (Fraleigh, 2002) and considering the partial difficulties with intimacy observed among kibbutz children (Sagi et al., 1994), we posited the following hypothesis:

H2. There will be an interaction between CSA-kibbutz-raised and non-kibbutz-raised adults and their attachment pattern in adulthood in the subcategory of closeness avoidance. We argue that whereas the two groups' rates of anxiety and avoidance will be comparable, the levels of closeness in adulthood will be lower among CSA-kibbutz-raised adults than among non-kibbutz adults.

2. Method

2.1. Participants

We carried out a power analysis using GPower version 3.1 (Faul et al., 2007). We defined ANOVA tests with one independent variable having two levels (CSA-kibbutz-raised versus control) and six dependent variables (as described below). As we did not have preliminary data, we adopted a conservative approach and defined our expected effects as weak. Beta was defined at the 0.80 level. The results of the analysis indicated that a total sample of 1,370 was desirable. We decided to include a larger number of participants as we anticipated dropouts. A total of 1,744 respondents completed the questionnaire. Among the initial respondents, 481 aged 30 or younger, were discarded, and eliminating these participants yielded two groups of comparable age range. An additional 78 participants were discarded from the analysis since they were kibbutz-raised but without CSA, thus not conforming to the inclusion criteria. The final data analysis included 1,185 participants. Of the total participants, 735 (526 women) were raised in a CSA kibbutz, and 450 participants (368 women) were raised in a non-kibbutz familial environment.

We used Qualtrics online calculator to calculate the ideal sample size with an acceptable 4% margin of error to represent the CSA-kibbutz-raised population (<https://www.qualtrics.com/experience-management/research/determine-sample-size/>). The population of individuals raised in CSA kibbutzim born after 1909 as of 2008 is 73,000 (Israel's Central Bureau of Statistics, 2008). We again took a conservative approach, presuming that 60,000 were still alive. Defining the population size at 60,000 with a 4% margin of error revealed that the ideal sample size would be 595. Thus, a sample size of 735 would comprise a representative sample of the CSA-kibbutz-raised population. The average age of study participants raised in a CSA kibbutz was 47.41 ($SD = 10.20$, range = 30–79); the average age of the non-kibbutz participants was 41.00 ($SD = 9.13$, range = 30–71). All participants volunteered their participation in this study.

2.2. Materials

Trait EI. Schutte Self-Report Emotional Intelligence Test (SSEIT; Schutte et al., 1998) was used in this study to measure trait EI (see all questionnaires in the Appendix). This questionnaire includes 33 statements relating to different aspects of EI. The SSEIT was chosen for measuring trait EI because of its well-established validity, its well-validated Israeli-Hebrew version (nulla), and its moderate number of items. Popular alternative trait EI questionnaires were rejected for being overly long for the older research population.

Participants were presented the 33 statements on a 5-point Likert-type scale ranging from 1 (*completely disagree*) to 5 (*completely agree*), with three items reverse-scored. The EI score is calculated as an average of the participants' ratings, with higher scores indicating higher levels of EI. A non-verbal communication sub-scale was computed for each

participant from a simple average of several items regarding this specific trait. This subscale was formulated together with Schutte for this study. Cronbach's alpha ($\alpha = .90$) and McDonald's omega ($\omega = .90$) were calculated for the SSEIT for the current sample. Cronbach's alpha ($\alpha = .82$) and McDonald's omega ($\omega = 0.84$) were calculated for the non-verbal communication subscale for the current sample.

The Revised Adult Attachment Scale (RAAS; Collins, 1996) was used to measure attachment characteristics. This questionnaire was chosen for its closeness measure, as this aspect was of interest in this research. Other widely used attachment questionnaires were not used because they lack a closeness score. The validated Hebrew-Israeli version of the RAAS was used (Maysseless et al., 1996). The 18-item RAAS includes statements relating to various characteristics of attachment. Participants rate their responses on a 5-point Likert-type scale, ranging from 1 (*completely disagree*) to 5 (*completely agree*). The RAAS yields four measures: (1) *anxious*, which is calculated via a simple average of its six relevant statements (Cronbach's Alpha = .88, McDonald's omega = .88); (2) *avoidance*, which is calculated via a simple average of its 12 relevant statements (five of which are reverse-scored; Cronbach's Alpha = .82, McDonald's omega = .82). Two additional sub-measures are: (1) *closeness*, which measures to what extent the individual feels comfortable in situations of closeness and intimacy (Cronbach's alpha = .77, McDonald's omega = .77); (2) *dependency*, which measures to what extent the individual feels comfortable in situations when dependent on others. Both measures were calculated via a simple average of the relevant statements (Cronbach's alpha = .73, McDonald's omega = .74).

The Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965) was used to measure self-esteem. This questionnaire (translated to Hebrew and validated by Zack, 1976) includes 10 statements presented on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), with five statements reversed-scored. The self-esteem score was calculated by a simple average of the participant's ratings, with higher scores reflecting higher self-esteem. This questionnaire's reliability was calculated with Cronbach's alpha ($\alpha = .91$) and McDonald's omega ($\omega = .91$).

Finally, participants were asked a single question for which they were asked to rate the quality of their kibbutz experience, presented on a 5-point Likert-type scale. This study was approved by the ethics committee (IRB) of the Ruppin Academic Center. The study's IRB approval number is 16-01.

2.3. Procedure

Participants responded to a message that we distributed on various Facebook groups or face-to-face. Many participants were drafted via other participants (i.e., snowball technique), and others were drafted via Facebook groups intended for kibbutz-raised adults. Each message included a Qualtrics link to the questionnaire, which each participant anonymously completed. Participants were able to complete the questionnaire on a computer, tablet, or smartphone. Some of the participants completed the questionnaire on an Apple iPod-Air supplied by the authors for that purpose.

The questionnaire included an introduction, followed by the questionnaire items with no time limit. The introduction provided the researcher's contact information (name, cellphone number, email address) as well as an assurance of anonymity. The questionnaire also included demographic questions regarding the participant's gender, age, and a closed (yes/no) question regarding any childhood involvement with kibbutz communal sleeping arrangements. Participants who reported that they had experienced familial sleeping arrangements at their kibbutz were excluded from the research data. The measures were presented in the following order: SSEIT, RSE, and RAAS. The results were gathered automatically via the Qualtrics system.

2.4. Statistical approach

To examine the main hypotheses, we initially looked for differences between the two research groups—CSA kibbutz-raised adults and non-kibbutz-raised adults—concerning the study's main variables: trait EI, closeness, and attachment. To do so, we ran ANCOVA analyses with age and gender as covariates. We selected these two covariates since, for various dimensions of trait EI, women's scores tend to be higher than men's and because age correlates positively with other trait EI dimensions (Pérez-Díaz et al., 2020; Tsaousis and Kazi, 2013). Next, to deepen our understanding of the nature of the relations between CSA kibbutz upbringing and EI, closeness, and attachment, we performed analyses of least significant difference (LSD). Using this method of analysis, we examined our hypotheses at different levels of the investigated personality traits: dependency, anxiety, self-esteem, and avoidance. We also tested our hypotheses at different age groupings. Thus, we examined interactions between our independent variable—CSA kibbutz-raised adults and non-kibbutz-raised adults—and the moderators: dependency, anxiety, self-esteem, avoidance, and age, on our dependent variables: EI, closeness, and attachment.

We also decided to test our hypotheses in five equal-sized groups, subject to participants' scores in each of the five moderators so that each group comprised 237 participants. The sample was sufficiently large to allow an adequate number of participants in each of the five subcategories. This division into five subcategories relies on the statistical literature, suggesting this division for similar analyses (Aron and Aron, 2002; Coolican, 2018). The rationale behind splitting the sample into five sub-groups is that the various subcategories need to differ substantially from each other; thus, limiting the subcategories to two or three may be insufficient. Moreover, each subcategory should still include a sufficient number of participants and provide simple and easy-to-understand results.

3. Results

The study findings will be reviewed in the following order:

- 3.1 trait EI—general findings
- 3.2 closeness and attachment—general findings
- 3.3 the influence of dependency, anxiety, self-esteem, and avoidance on trait EI
- 3.4 influences of dependency, anxiety, self-esteem, and avoidance on closeness
- 3.5 the perceived quality of the kibbutz experience
- 3.6 the influence of age on trait EI and closeness

3.1. Emotional intelligence – general findings

Performing a one-way ANCOVA, in which age and gender were held as constants, trait EI of CSA kibbutz-raised adults ($M = 3.75$, $SD = 0.41$) was found, as hypothesized, to be lower than the trait EI of non-kibbutz-raised adults ($M = 3.83$, $SD = 0.36$), $F_{(1,1181)} = 9.72$, $\eta^2_p = 0.008$, $p < .01$.

In a further one-way ANCOVA, with age and gender held as constants, non-verbal emotional communication (a subcategory of trait EI) of kibbutz-raised adults ($M = 3.44$, $SD = 0.43$) was found to be lower than non-verbal emotional communication among non-kibbutz-raised adults ($M = 3.59$, $SD = 0.44$), $F_{(1,1181)} = 25.67$, $\eta^2_p = 0.02$, $p < .001$.

3.2. Closeness and attachment – general findings

A one-way ANCOVA, holding age and gender as constants, revealed that closeness levels of CSA kibbutz-raised adults ($M = 3.40$, $SD = 0.67$)

Table 1. Main effects, interactions and planned comparisons of dependency, anxiety, Kibbutz upbringing on trait EI and closeness.

Effect	Explanation	Trait Emotional Intelligence					Closeness				
		Effect Size		Sig. ¹	F ¹	df ¹	Effect Size		Sig. ¹	F ¹	df ¹
		η^2	η_p^2				η^2	η_p^2			
Kibbutz upbringing	Differences between kibbutz and non-kibbutz-raised adults	-	0.013	p < .001	14.81	1,1166	-	0.02	p < .001	24.3	1,1165
Dependency		-	0.09	p < .001	28.78	4,1166	-	0.21	p < .001	78.54	4,1165
Dependency * Kibbutz		-	0.013	p < .01	3.95	4,1166	-	0.007	ns	1.95	4,1165
Lowered EI of kibbutz-raised adults ²	very low dependency level	0.06	-	p < .001	-	-	0.06	-	p < .001		
	low dependency level	0.05	-	p < .01	-	-	0.05	-	p < .01		
	moderate dependency level	0.02	-	p < .01	-	-	-	-	ns		
Kibbutz upbringing	Differences between kibbutz and non-kibbutz-raised adults	-	0.006	p < .01	7.24	1,1166	-	0.01	p < .01	11.66	1,1165
Anxiety		-	0.18	p < .001	62.19	4,1166	-	0.21	p < .001	79.43	4,1165
Anxiety * Kibbutz		-	0.013	p < .01	3.82	4,1166	-	0.01	p < .05	2.76	4,1165
Lowered EI of kibbutz-raised adults ²	very low anxiety level	0.02	-	p < .05	-	-	-	-	ns	-	-
	low Anxiety level	0.06	-	p < .01	-	-	-	-	ns	-	-
	very high anxiety level	0.036	-	p < .01	-	-	0.11	-	p < .001	-	-

¹ In this section, a two-way ANCOVA analysis was performed, with gender and age held constant.

² In this section, an LSD post-hoc analysis was performed, with gender and age held constant.

were lower than for non-kibbutz-raised adults ($M = 3.53, SD = 0.60$), $F_{(1,1173)} = 14.26, \eta^2_p = 0.012, p < .001$.

An additional one-way ANCOVA, holding age and gender as constants, revealed no significant difference between CSA kibbutz-raised adults and non-kibbutz-raised adults in the attachment patterns of anxiety, avoidance, and dependence. An analysis of the means and standard deviations of these variables is presented in Table S-2 in the Appendix, and the Pearson correlations between these variables are presented in Table S-3 in the Appendix.

Examining the Research Hypotheses at Different Levels of Dependency, Anxiety, Avoidance, and Self-Esteem:

The research hypotheses regarding lower levels of closeness and trait EI among CSA kibbutz-raised adults were examined through various subdivisions of the sample. The sample was divided by dependency, anxiety, and avoidance levels—three subcategories of attachment—and self-esteem levels.

For the anxiety variable, each participant was classified into one of five levels, determined by percentile range: *very low level of anxiety* (1–20 percentile), *low level of anxiety* (21–40 percentile), *moderate anxiety* (41–60 percentile), *high level of anxiety* (61–80 percentile), or *very high level of anxiety* (81–100 percentile). All participants were categorized for the dependency, avoidance, and self-esteem variables identically, by percentile range.

The research hypotheses were analyzed at all five levels of anxiety, avoidance, dependency, and self-esteem. Considering the overlap between the attachment measures of closeness and dependency, the closeness levels of CSA kibbutz-raised adults were not analyzed by dependency level.

For all seven of the statistical analyses, to be presented below, a two-way ANCOVA was first conducted to examine the association between CSA kibbutz education and an additional variable (anxiety/dependency/avoidance/self-esteem) with a dependent variable (trait EI/closeness). A post-hoc analysis examined the possibility of low trait EI and low closeness among CSA kibbutz-raised adults at all levels of the additional variable. All post-hoc analyses were LSD analyses. Age and gender were held as constants in all ANCOVA and LSD analyses.

3.3. The influence of dependency, anxiety, self-esteem, and avoidance levels on trait EI

3.3.1. Trait EI differences by levels of avoidance

Main effects were found for CSA kibbutz upbringing and avoidance level. An interaction effect between these variables in trait EI was also found (see Table 1). Results of the post-hoc analysis are presented in Figure 1:

As shown in Figure 1, a post-hoc analysis revealed that only among participants with very high avoidance was the trait EI of kibbutz-raised adults significantly lower than that of non-kibbutz adults, $\eta^2 = 0.06, p < .001$.

3.3.2. Trait EI differences by levels of dependency

Main effects were found for CSA kibbutz upbringing and dependency level, and an interaction effect between these variables for trait EI was also found (see additional information in Table 1). A post-hoc analysis revealed a significant difference in trait EI between kibbutz and non-

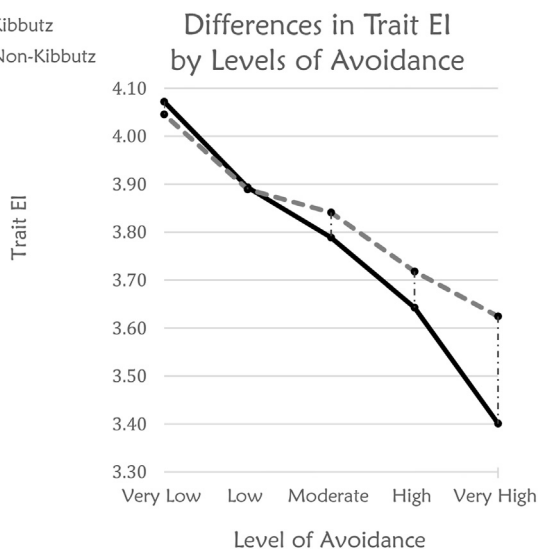


Figure 1. Differences in trait EI by levels of avoidance. Trait EI averages of CSA kibbutz-raised adults and non-Kibbutz adults, by levels of avoidance.

kibbutz adults only among participants with low dependency $\eta^2 = 0.05$, $p < .01$ and very low dependency $\eta^2 = 0.06$, $p < .001$ (see Graph S–I in the Appendix).

3.3.3. Trait EI differences by levels of anxiety

Main effects were found for CSA kibbutz upbringing and anxiety level. An interaction effect between these variables in trait EI was also found (see Table 1). Post-hoc analysis found that CSA kibbutz-raised adults with very low anxiety reported higher levels of trait EI than non-kibbutz adults, albeit yielding a weak effect, $\eta^2 = -0.02$, $p < .05$. Notably, a converse effect was found among participants with low anxiety and very high anxiety; CSA kibbutz-raised adults reported lower levels of trait EI than did non-kibbutz adults. These effects were medium-weak, $\eta^2 = 0.06$, $p < .01$ for low anxiety and $\eta^2 = 0.036$, $p < .01$ for very high anxiety. See Graph S–2 in the Appendix.

3.3.4. Trait EI difference by levels of self-esteem

Main effects were found for kibbutz education and self-esteem, along with an interaction effect between these variables on trait EI (see Table 2). Post-hoc analysis revealed that only among participants with very low self-esteem did CSA kibbutz-raised adults score significantly lower on trait EI than non-kibbutz-raised adults. This effect was of medium strength, $\eta^2 = 0.07$, $p < .001$ (see Graph S–3 in the Appendix).

3.4. The influence of dependency, anxiety, self-esteem, and avoidance levels on closeness

3.4.1. Closeness at Different Levels of Dependency

Main effects were found for kibbutz upbringing and dependency level, whereas an interaction effect between these two variables for closeness was not found (see Table 1). Post-hoc analysis found that a lower level of closeness was only found among CSA kibbutz-raised adults with very low dependency, $\eta^2 = 0.06$, $p < .001$, low dependency, $\eta^2 = 0.05$, $p < .001$, and moderate dependency, $\eta^2 = 0.02$, $p < .01$ (see Graph S–4 in the Appendix).

3.4.2. Closeness at different levels of anxiety

Main effects were found for kibbutz education and anxiety level. An interaction effect between these two variables on closeness was also found (see Table 1). Post-hoc analysis found that only among participants with very high anxiety, closeness levels were lower for CSA kibbutz-raised adults than for non-kibbutz adults. This effect was of high-medium strength, $\eta^2 = 0.11$, $p < .001$ (see Graph S–5 in the Appendix).

3.4.3. Closeness at different levels of self-esteem

Main effects were found for kibbutz education and self-esteem. An interaction effect between these two variables in closeness was also found (see Table 1). a post-hoc analysis found that only among participants with very low self-esteem, closeness levels of CSA kibbutz-raised adults were lower than for non-kibbutz adults $\eta^2 = 0.06$, $p < .001$ (see Graph S–6 in the Appendix).

3.5. The quality of the Kibbutz experience

Only CSA kibbutz-raised adults rated the quality of their childhood kibbutz experience. To examine the possibility of a relationship between the kibbutz members' self-reports of this experience and the research variables, Spearman correlations were calculated to determine associations between the quality of the Kibbutz experience and the research variables among CSA kibbutz-raised adults. Spearman rank tests indicated positive relations between kibbutz upbringing and trait EI ($r_s = .08$, $p < .05$), closeness ($r_s = .11$, $p < .01$), dependency ($r_s = .18$, $p < .001$), avoidance ($r_s = .16$, $p < .001$), anxiety ($r_s = .18$, $p < .001$), self-esteem ($r_s = .20$, $p < .001$), and age ($r_s = .08$, $p < .04$). Non-verbal communication and kibbutz upbringing were found not to be associated ($r_s = .03$, $p > .05$).

3.6. The influence of age on trait EI and closeness

Research participants were divided into four age groups: up to age 45, 45–55, 56–65, and 66 and over. After examining the research hypotheses by analyses of variance, LSD post-hoc analyses were conducted. The post-hoc analyses were used to examine the differences between CSA kibbutz-raised adults and non-kibbutz adults for trait EI and closeness, separately for each age group. The findings from these analyses appear in Table 3. CSA kibbutz-raised adults at the age of 55 (or younger) reported lower trait EI (age 0–45, $p < .01$; age 45–55, $p < .05$) and lower closeness levels (age 0–45, $p < .01$; age 45–55, $p < .05$) than did same-age non-kibbutz adults. Notably, both effects were very small: trait EI (age 0–45, $\eta^2 = 0.011$; age 45–55, $\eta^2 = 0.014$); closeness (age 0–45, $\eta^2 = 0.013$; age 45–55, $\eta^2 = 0.042$).

4. Discussion

The present study examined whether adults raised in kibbutzim with communal sleeping arrangements (CSA) would be characterized by current difficulties in trait EI and closeness. The study's findings reveal a significant, though weak, decrease in trait EI and closeness levels among CSA kibbutz-raised adults compared with non-kibbutz adults. This

Table 2. Main effects, interactions and planned comparisons of self-esteem, avoidance, Kibbutz upbringing on trait EI and closeness.

Effect	Explanation	Trait Emotional Intelligence				Closeness					
		Effect Size		Sig. ¹	F ¹	df ¹	Effect Size		Sig. ¹	F ¹	df ¹
		η^2	η_p^2				η^2	η_p^2			
Kibbutz Upbringing	Differences between kibbutz-raised and non-kibbutz-raised adults	0.01		$p < .001$	10.16	1,1166	-	0.012	$p < .001$	13.57	1,1165
Self-esteem		-	0.23	$p < .001$	88.24	4,1166	-	0.12	$p < .001$	40.82	4,1165
Self-esteem * Kibbutz		-	0.014	$p < .01$	4.11	4,1166	-	0.01	$p < .05$	2.78	4,1165
Lowered EI of kibbutz-raised adults ²	very low Self-esteem	0.07	-	$p < .001$	-	-	-	0.06	$p < .001$	-	-
Kibbutz Upbringing	Differences between kibbutz and Non-kibbutz-raised adults	-	0.006	$p < .01$	7.14	1,1166					
Avoidance		-	0.2	$p < .001$	72.34	4,1166					
Avoidance * Kibbutz		-	0.013	$p < .01$	3.91	4,1166					
Lowered EI of kibbutz-raised adults ²	very high Avoidance	0.06	-	$p < .001$	-	-					

¹ In this section, a Two-way ANCOVA analysis was performed, with gender and age held constant.

² In this section, an LSD post-hoc analysis was performed, with gender and age held constant.

Table 3. Differences in trait EI and closeness, between Kibbutz and non-Kibbutz adults, in various age groups.

Age group	n		Difference in Closeness ³				Difference in Trait-EI ³			
	Kibbutz	Non-kibbutz	η^2	Sig	F	df	η^2	Sig	F	df
All ages ¹	735	450	0.012	p < .001	14.26	1,1173	0.008	p < .01	9.7	1,1181
age 45 and younger ²	355	334	0.013	p < .01	-	-	0.011	p < .01	-	-
Ages 45–55 ²	219	75	0.042	p < .05	-	-	0.014	p < .05	-	-
Ages 55–65 ²	116	33	-	ns	-	-	-	ns	-	-
Age 65 and older ²	45	9	-	ns	-	-	-	ns	-	-

¹ A two-way ANCOVA analysis was performed with gender and age held constant.

² An LSD post-hoc analysis was performed with gender held constant.

³ In this table, all differences describe a lower level of trait EI and closeness by CSA kibbutz-raised adults compared with non-kibbutz adults.

decrease supports the study hypotheses, though the weak effect size of the difference constrains the validity of our claim that CSA kibbutz-raised adults are characterized by lower levels of trait EI and closeness. Most kibbutz-raised adults report trait EI and closeness levels comparable to those of non-kibbutz adults, as well as moderate-to-high self-reported self-esteem and average-to-high attachment quality.

The most sizable difference was revealed when trait EI and closeness were examined among kibbutz and non-kibbutz adults with poor attachment patterns and low self-esteem. Among those in the 1–20th percentile group of attachment patterns and self-esteem, CSA kibbutz-raised adults displayed significantly lower trait EI and closeness than non-kibbutz adults in the same percentile group. In other words, kibbutz-raised adults with very low self-esteem showed lower trait EI and closeness than did non-kibbutz adults with very low self-esteem. Also, kibbutz-raised adults with very high anxiety and avoidance levels displayed significantly lower trait EI levels and closeness than non-kibbutz adults with similar profiles. These distinctions were significant as well as sizable.

We will first address the findings regarding the entire sample of CSA kibbutz-raised adults and then address the findings relating to adults with low self-esteem and poor attachment.

4.1. Possible explanations for the moderate levels of trait EI and closeness among most adults raised in CSA Kibbutzim

Most adults raised in kibbutzim with communal sleeping arrangements (CSA) showed comparable trait EI and closeness levels, as did non-kibbutz adults. These present results, relating to participants aged 40–70, are in line with previous research examining the intimacy levels of younger kibbutz adults, aged 20–39 (Wiseman and Lieblich, 1989). These researchers suggested that CSA kibbutz-raised adults managed to develop intimate interpersonal relationships and normative emotional awareness once exposed to a variety of adult social domains external to the kibbutz (e.g., army service, university, work, romantic relationships). They suggested that these social frameworks offered abundant opportunities for these young kibbutz-raised adults to develop qualities of intimacy and emotional awareness. These assertions are supported by the current findings for most of the CSA kibbutz-raised adults.

4.2. Possible explanations for the low levels of trait EI and closeness among some Kibbutz raise adults

Findings show that CSA kibbutz-raised adults who reported very low self-esteem and high anxiety also reported lower trait EI and less intimacy than city-raised adults with similar self-esteem and anxiety levels. As trait EI is strongly associated with resilience (Schneider, Lyons and Khazon, 2013) and effective stress management (Mikolajczak and Luminet, 2008), we suggest that these low self-esteem CSA kibbutz-raised adults may be less resilient to emotional adversity than city children with similar characteristics. We suggest that the lack of familial support, low parental availability, and low child-parent intimacy

in the kibbutz (Sharabany and Yariv, 1986) had a uniquely negative effect on these vulnerable kibbutz children.

Furthermore, any individual with low self-esteem would appear to need a socially supportive environment in order to better cope with adversity. The CSA kibbutz-raised adults with very low self-esteem and high anxiety may also have been negatively influenced by their limited social alternatives in childhood on the kibbutz. As noted, the kibbutz offered a unified, monolithic, intense, unchanging peer group, with other social alternatives unavailable, while city-raised children were offered more diverse social alternatives, with a variety of different children in each alternative (Gavron, 2000). Hence, city children with low self-esteem are likely to have been offered a variety of social arenas, providing more opportunities to find a social group to best fit their emotional needs.

These explanations (the monolithic social environment and the lack of familial support) are in line with the present findings, conceptualizations, and theory regarding children's mental resilience (Carlton et al., 2006). The current findings regarding children's resilience show that children's ability to 'bounce back' and recover from life's adversities relies on (a) the self, (b) familial support, and (c) support of the environment (Carlton et al., 2006; Masten, 2001). We suggest that CSA kibbutz-raised children with low self-esteem were especially in need of family and environmental support to compensate for their diminished self-efficacy to maintain resilience. We propose that kibbutz children with relatively higher self-esteem and stronger ego strength managed to overcome these potential impediments—the absence of familiar support and monolithic social environment—and to develop normative levels of trait EI and intimacy.

An alternative explanation relates to attachment theory and two sub-strategies of avoidance: emotional avoidance (low closeness to attachment figure) and physical avoidance (an aspiration to avoid physical dependence on the attachment figure; Mikulincer and Shaver, 2020). Specifically, avoidance strategy could include a willingness to receive material support from the attachment figure (e.g., nursing, money, residence) alongside a lack of willingness to receive intimate emotional support from the same figure. Such a relationship implies a physical sense of dependence but lacks emotional closeness (Bion, 1962). In the current study, some kibbutz-raised adults with low self-esteem and high anxiety did not report relatively lower dependency but did present a relatively low closeness level. We suggest that these kibbutz children developed emotional avoidance but did not develop physical avoidance. They might have grown accustomed to physically working together, sharing toys and food with their peers (Dror, 2002), but they maintained some emotional distance and avoidance to protect themselves. These findings are consistent with studies concerning the coping strategies of children raised in the Soviet Bloc (Nesteruk and Marks, 2011; Saxonberg and Sirovátka, 2006), who tended to express emotional avoidance and decreased emotional disclosure. Soviet Bloc education shows some similarities—as well as major differences—when compared with the CSA kibbutz education: Both strived to instill socialist values of cooperation, equality, and resource sharing. However, kibbutzim in Israel were

organized in small, commune-like, agricultural villages located in a capitalistic democratic regime, with frequent wars against adjacent countries (Lieblich, 2010). In contrast, the Soviet Bloc's population was mostly organized in cities in a non-democratic, communist regime (Nesteruk and Marks, 2011).

4.3. Non-verbal communication

Another key finding from this study was that CSA kibbutz-raised adults viewed themselves as having low non-verbal communication capacities (e.g., "It is difficult for me to understand the non-verbal meaning of others' behavior") when compared with non-kibbutz adults. The difference between the two examined groups was of medium-weak strength.

Past research indicated that kibbutz adolescents scored higher than city adolescents in self-report, hypothetical moral dilemmas tests (Kohlberg, 1971; Hurvitz, 1979; Bar-Yam et al., 1980; Sharabany and Toren, 1982; Nadler et al., 1979). The combination of poor non-verbal communication skills in adulthood (found in this study) and advanced moral thinking during kibbutz childhood, can be explained by the kibbutz education's thrust, particularly its aim to instill egalitarian and universal values served by an intellectual-moral rationale. This explanation suggests that a moral education with its various components could diminish the importance of non-verbal interpersonal signs, which tend to be unique, intuitive, personalized, and less intellectual. Naturally, this conjecture requires further corroboration.

4.4. Study limitations

This study has some limitations. First, the kibbutz ecology is complex and includes many components. The distinct educational views and practices of the three Israeli kibbutz movements—*Kibbutz Artzi*, the *Ichud HaKvutzot V'Hakibutzim*, and *Kibbutz HaMeuchad*—were not examined in this study, although these movements operated diverse and independent educational systems. For the sake of clarity, we chose to study CSA kibbutz-raised adults as a uniform and homogenous group in the current study, although it is likely that the differences in educational approaches across the three movements influenced the kibbutz-raised participants in various ways. Second, in the second half of the 20th century, significant modifications were introduced to kibbutz principles and education policy. Changes in values and culture occurred within the kibbutz movement and in general Israeli society. The kibbutz educational establishment began to appreciate the importance of the parent-child relationship (specifically, of the mother-infant relationship), whereas Israeli society, in general, began to constrain its collective elements and expand its individualist elements. Thus, the current study, which aggregated all kibbutz adult participants into a single group, did not consider inter-generational differences between those educated before, during, and after the frequent modifications to the kibbutz educational agenda.

From a methodological perspective, this study did not collect certain demographic data (e.g., marital status, children) that may have improved our understanding of the different influences on kibbutz-raised adults of trait EI and closeness.

As some study participants were recruited through other participants (i.e., snowball technique), the authors lacked full control over who completed the questionnaires. Furthermore, the non-verbal communication scale introduced in this study was created from items derived from the SSEIT (Schutte et al., 1998) relying on data from this research, but without further investigating its content validity.

4.5. Child rearing in collective settings - future directions and research

Several researchers have described kibbutz-raised adults' daily occupational and social functioning as overtly normative (Ebenstein et al., 2018), while this research shows some of them seems to have lowered trait EI and closeness. Similar tendencies have been identified in adults raised in socialist countries (Triandis, 2018). These elusive

emotional difficulties are likely related to the tendency of individuals with avoidant attachment to deny their emotional difficulties (Mikulincer and Shaver, 2007). The current study shows that whereas low levels of trait EI and closeness are characteristic of collectively raised adults with low self-esteem and high levels of anxiety and avoidance, low levels of trait EI and closeness do not characterize the majority of kibbutz-raised individuals.

How can we identify collectively raised adults with low levels of trait EI and closeness? Are there other factors that predict this decrease among these adults? Answers to these questions can expand our understanding of additional factors related to low levels of trait EI, closeness, and non-verbal communication that might uniquely characterize adults raised in collective settings. We argue that answers to these questions will help therapists offer appropriate assistance to individuals raised in such settings. It is also likely that therapeutic interventions for individuals raised in communal or collective settings can help them establish a more advanced emotional awareness and cultivate their capacity for close relationships with others.

Declarations

Author contribution statement

R. Sidi, D. Aisenberg: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Funding statement

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Data availability statement

Data will be made available on request.

Declaration of interests statement

The authors declare no conflict of interest.

Additional information

Supplementary content related to this article has been published online at <https://doi.org/10.1016/j.heliyon.2020.e05775>.

References

- Ainsworth, M.D.S., 1967. *Infancy in Uganda: Infant Care and the Growth of Love*. Johns Hopkins University Press, Baltimore.
- Arnon, A., 1980. *Intimacy and Interpersonal Relationship: a Comparison between Kibbutz Children Raised in Communal Sleeping Arrangements and Kibbutz Children Raised in Familial Sleeping Arrangements*. University of Haifa [In Hebrew]. Unpublished master's thesis.
- Aron, A., Aron, E.N., 2002. *Statistics for the behavioral and social sciences*. Prentice Hall Press.
- Aviezer, O., Sagi, A., 1999. The rise and fall of collective sleeping and its impact on the relationships of kibbutz children and parents. In: Folling, W., Folling-Albers, M. (Eds.), *The Transformation of Collective Education in the Kibbutz: the End of Utopia*. Frankfurt, Peter Lang, pp. 192–211.
- Aviezer, O., Sagi, A., Joels, T., Ziv, Y., 1999. Emotional availability and attachment representations in kibbutz infants and their mothers. *Dev. Psychol.* 35 (3), 811.
- Aviezer, O., Sagi, A., van Ijzendoorn, M., 2002. Balancing the family and the collective in raising children: why communal sleeping in kibbutzim was predestined to end. *Fam. Process* 41 (3), 435–454.
- Avrahami, A., 1998. *The Lexicon of the Kibbutz*. Yad Tabenkin, Efal [In Hebrew].
- Balaban, A., 2000. *Shiva'a*. Hakibbutz Hameuchad Press, Tel Aviv [In Hebrew].
- Bar-Yam, M., Kohlberg, L., Naame, A., 1980. Moral reasoning of students in different cultural, social, and educational settings. *Am. J. Educ.* 88 (3), 345–362.
- Bion, W.R., 1962. *Learning from Experience*. Karnac, London.
- Biran, D., 1983. *The Emotional Experience and Verbal Expression of Emotion of City and Kibbutz Adolescents*. University of Haifa [In Hebrew]. Unpublished master's thesis.

- Bitan, N., 1978. Openness – a Comparison between Kibbutz and City Adolescents. University of Tel-Aviv [In Hebrew]. Unpublished master's thesis.
- Bowlby, J., 1980. Attachment and Loss – Vol. 3: Loss. Basic Books, New York.
- Bylsma, L.M., Taylor-Clift, A., Rottenberg, J., 2011. Emotional reactivity to daily events in major and minor depression. *J. Abnorm. Psychol.* 120 (1), 155.
- Carlton, B.S., Goebert, D.A., Miyamoto, R.H., Andrade, N.N., Hishinuma, E.S., Makini Jr., G.K., et al., 2006. Resilience, family adversity and well-being among Hawaiian and non-Hawaiian adolescents. *Int. J. Soc. Psychiatr.* 52 (4), 291–308.
- Cassidy, J., Shaver, P.R. (Eds.), 1999. *Handbook of Attachment: Theory, Research and Clinical Applications*. Guilford Press, New York.
- Chopik, W.J., Edelstein, R.S., Grimm, K.J., 2019. Longitudinal changes in attachment orientation over a 59-year period. *J. Pers. Soc. Psychol.* 116 (4), 598.
- Cohen, S., 2013. *States of Denial: Knowing about Atrocities and Suffering*. John Wiley & Sons, Cambridge.
- Collins, N.L., 1996. Working models of attachment: implications for explanation, emotion, and behavior. *J. Pers. Soc. Psychol.* 71 (4), 810.
- Coolican, H., 2018. *Research methods and statistics in psychology*. Routledge.
- Dror, Y., 1995. Shifts and trends in the historical, social and educational study of the kibbutz [In Hebrew]. *Catedra* 77 (10), 161–172.
- Dror, Y., 2002. *The Chronicles of the Kibbutz Education: from Practice to Theory*. Hakibbutz Hameuchad Press, Tel Aviv [In Hebrew].
- Ebenstein, A., Gould, E., Hazan, M., Simhon, A., 2018. The nature versus nurture debate and the direct effect of parental influence: evidence from the Israeli kibbutz. In: *Maurice Falk Institute for Economic Research in Israel. Discussion Paper Series*, pp. 1–26, 3.
- Faul, F., Erdfelder, E., Lang, A.G., Buchner, A., 2007. G* Power 3: a flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behav. Res. Methods* 39 (2), 175–191.
- Fonagy, P., 2018. *Attachment Theory and Psychoanalysis*. Routledge, New York.
- Fonagy, P., Luyten, P., 2018. Attachment, mentalizing, and the self. In: *Handbook of Personality Disorders: Theory, Research, and Treatment*, p. 123.
- Fonagy, P., Campbell, C., Bateman, A., 2017. Mentalizing, attachment, and epistemic trust in group therapy. *Int. J. Group Psychother.* 67 (2), 176–201.
- Fraley, R., 2002. Attachment stability from infancy to adulthood: meta-analysis and dynamic modeling of developmental mechanisms. *Pers. Soc. Psychol. Rev.* 6 (2), 123–151.
- Gaunt, R., Bassi, L., 2012. Modeling and compensatory processes underlying involvement in child care among kibbutz-reared fathers. *J. Fam. Issues* 33 (6), 823–848.
- Gavron, D., 2000. *The Kibbutz: Awakening from utopia*. Rowman & Littlefield, London, England.
- Granqvist, P., Sroufe, L.A., Dozier, M., Hesse, E., Steele, M., van Ijzendoorn, M., et al., 2017. Disorganized attachment in infancy: a review of the phenomenon and its implications for clinicians and policymakers. *Am. J. Bioeth.* 19 (6), 534–558.
- Hurvitz, L., 1979. *The Influence of Child-Rearing Environments in Israel on 1st, 2nd and 3rd Graders Level of Resistance to Temptation and Stages of Moral Judgment*. University of southern California.
- Israel's Central Bureau of Statistics, 2008. *The Population of the Kibbutzim in Israel 1961–2005*. CBS print, Jerusalem.
- Kibbutz Ha'artzi, 1973. *The Statute of the Kibbutz Ha'artzi Movement*. Hakibbutz Ha'artzi press, Tel Aviv [In Hebrew].
- Kohlberg, L., 1971. Stages of moral development. *Moral Educ.* 1, 23–92.
- Kokkinos, C.M., Kipritsi, E., 2012. The relationship between bullying, victimization, trait emotional intelligence, self-efficacy and empathy among preadolescents. *Soc. Psychol. Educ.* 15 (1), 41–58.
- Lamdan, A., 2004. *Silence Outcry and Discourse: Three Generations of Mothers in Kibbutz*. Yad Tabenkin, Ramat Efal.
- Lewis, S., McNulty, J., White, P., Lane, S., Mackay, S., 2017. Emotional intelligence development in radiography curricula: results of an international longitudinal study. *J. Med. Imag. Radiat. Sci.* 32 (5), 73–86.
- Lieblch, A., 2010. A century of childhood, parenting, and family life in the kibbutz. *J. Israeli Hist.* 29, 1–24.
- Malouff, J.M., Schutte, N.S., Thorsteinsson, E.B., 2014. Trait-emotional-intelligence and romantic relationship satisfaction: a meta-analysis. *Am. J. Fam. Ther.* 42 (1), 53–66.
- Masten, A.S., 2001. Ordinary magic: resilience processes in development. *Am. Psychol.* 56, 227–238.
- Mayseless, O., Scher, A., 2000. Mother's attachment concerns regarding spouse and infant's temperament as modulators of maternal separation anxiety. *J. Child Psychol. Psychiatry* 41 (7), 917–925.
- Mayseless, O., Danieli, R., Sharabany, R., 1996. Adults' attachment patterns: coping with separations. *J. Youth Adolesc.* 25 (5), 667–690.
- Meeks, T.W., Vahia, I.V., Lavretsky, H., Kulkarni, G., Jeste, D.V., 2011. A tune in "a minor" can "b major": a review of epidemiology, illness course, and public health implications of subthreshold depression in older adults. *J. Affect. Disord.* 129 (1–3), 126–142.
- Mikolajczak, M., Luminet, O., 2008. Trait emotional intelligence and the cognitive appraisal of stressful events: an exploratory study. *Pers. Individ. Differ.* 44 (7), 1445–1453.
- Mikolajczak, M., Roy, E., Luminet, O., Fillée, C., de Timary, P., 2007. The moderating impact of emotional intelligence on free cortisol responses to stress. *Psychoneuroendocrinology* 32 (8), 1000–1012.
- Mikolajczak, M., Nelis, D., Hansenne, M., Quoidbach, J., 2008. If you can regulate sadness, you can probably regulate shame: associations between trait emotional intelligence, emotion regulation and coping efficiency across discrete emotions. *Pers. Individ. Differ.* 44 (6), 1356–1368.
- Mikulincer, M., Shaver, P.R., 2007. *Attachment in Adulthood: Structure, Dynamics, and Change*. Guilford Press, New York.
- Mikulincer, M., Shaver, P.R., 2020. *Applications of attachment theory and research. Applications of Social Psychology: How Social Psychology Can Contribute to the Solution of Real-World Problems*.
- Mikulincer, M., Shaver, P.R., Pereg, D., 2003. Attachment theory and affect regulation: the dynamics, development, and cognitive consequences of attachment-related strategies. *Motiv. Emot.* 27 (2), 77–102.
- Nadler, A., Romek, E., Shapira-Friedman, A., 1979. Giving in the kibbutz: pro-social behavior of city and kibbutz children as affected by social responsibility and social pressure. *J. Cross Cult. Psychol.* 10 (1), 57–72.
- Nesteruk, O., Marks, L.D., 2011. Parenting in immigration: experiences of mothers and fathers from Eastern Europe raising children in the United States. *J. Comp. Fam. Stud.* 42 (6), 809–825.
- Parker, J.D., Saklofske, D.H., Wood, L.M., Eastabrook, J.M., Taylor, R.N., 2005. Stability and change in emotional intelligence: exploring the transition to young adulthood. *J. Individ. Differ.* 26 (2), 100–106.
- Pérez-Díaz, P.A., Perazzo, M.F., Chiesi, F., Marunic, G., Granville-Garcia, A.F., Paiva, S.M., Petrides, K.V., 2020. Invariance of the Trait Emotional Intelligence Construct across Populations and Sociodemographic Variables. *Personality and Individual Differences*, p. 110038.
- Petrides, K.V., Pita, R., Kokkinaki, F., 2007. The location of trait emotional intelligence in personality factor space. *Br. J. Psychol.* 98 (2), 273–289.
- Petrides, K.V., Mikolajczak, M., Mavroveli, S., Sanchez-Ruiz, M.J., Furnham, A., Pérez-González, J.C., 2016. Developments in trait emotional intelligence research. *Emot. Rev.* 8 (4), 335–341.
- Pinquart, M., Feubner, C., Ahnert, L., 2013. Meta-analytic evidence for stability in attachments from infancy to early adulthood. *Am. J. Bioeth.* 15 (2), 189–218.
- Regev, E., 1976. *The Emotional Moderation and Dispersion as a Result of Communal Kibbutz Education*. University of Haifa [In Hebrew]. Unpublished master's thesis.
- Regev, E., Beit-Hallahmi, B., Sharabany, R., 1980. Affective expression in kibbutz-communal, kibbutz-familial, and city-raised children in Israel. *Child Dev.* 5, 232–237.
- Richman, C.L., 2004. Kibbutzim in constant transition. *Psychol. Develop. Soc.* 16 (2), 125–138.
- Roisman, G.I., Holland, A., Fortuna, K., Fraley, R.C., Clausell, E., Clarke, A., 2007. The Adult Attachment Interview and self-reports of attachment style: an empirical rapprochement. *J. Pers. Soc. Psychol.* 92 (4), 678.
- Rosenberg, M., 1965. *Society and the Adolescent Self-Image*. Princeton university press, Princeton, NJ.
- Sagi, A., Lamb, M.E., Lewkowicz, K.S., Shoham, R., Dvir, R., Estes, D., 1985. Security of infant-mother, father, and metapelet attachments among kibbutz-reared Israeli children. *Monogr. Soc. Res. Child Dev.* 50, 257–275.
- Sagi, A., van Ijzendoorn, M.H., Aviezer, O., Donnell, F., Mayseless, O., 1994. Sleeping out of home in a kibbutz communal arrangement: it makes a difference for infant-mother attachment. *Child Dev.* 65 (4), 992–1004.
- Sagi, A., van Ijzendoorn, M.H., Scharf, M., Joels, T., Koren-Karie, N., Aviezer, O., 1997. Ecological constraints for intergenerational transmission of attachment. *IJBD (Int. J. Behav. Dev.)* 20 (2), 287–299.
- Sarrionandia, A., Mikolajczak, M., 2020. A meta-analysis of the possible behavioural and biological variables linking trait emotional intelligence to health. *Health Psychol. Rev.* 14 (2), 220–244.
- Saxonberg, S., Sirovátka, T., 2006. Failing family policy in post-communist Central Europe. *J. Comp. Pol. Anal.* 8 (2), 185–202.
- Schneider, T.R., Lyons, J.B., Khazon, S., 2013. Emotional intelligence and resilience. *Pers. Individ. Differ.* 55 (8), 909–914.
- Schulze, R., Roberts, R., 2005. *Emotional Intelligence: an International Handbook*. Cambridge, Hogrefe.
- Schutte, N.S., Malouff, J.M., Hall, L.E., Haggerty, D.J., Cooper, J.T., Golden, C.J., Dornheim, L., 1998. Development and validation of a measure of emotional intelligence. *Pers. Individ. Differ.* 25 (2), 167–177.
- Sharabany, R., Toren, Z., 1982. Socialization settings, parental discipline and children's moral judgment. In: *In International Symposium on Moral Education*. University of Fribourg, Switzerland.
- Sharabany, R., Wiseman, H., 1993. Close relationships in adolescence: the case of the kibbutz. *J. Youth Adolesc.* 22 (6), 671–695.
- Sharabany, R., Yariv, E., 1986. Intimacy with parents and best friend: comparison of adolescent girls in communal vs. familial sleeping arrangements in the kibbutz. In: *In the 44th Annual Convention of the International Council of Psychologists*. Tel Aviv. .
- Specht, J., Egloff, B., Schmukle, S.C., 2011. Stability and change of personality across the life course: the impact of age and major life events on mean-level and rank-order stability of the Big Five. *J. Pers. Soc. Psychol.* 101 (4), 862.
- Spiro, M.E., 2004. Utopia and its discontents: the kibbutz and its historical vicissitudes. *Am. Anthropol.* 106 (3), 556–568.
- Tan, Y., Zhang, Q., Li, W., Wei, D., Qiao, L., Qiu, J., Liu, Y., et al., 2014. The correlation between emotional intelligence and gray matter volume in university students. *Brain Cognit.* 91, 100–107.
- Triandis, H.C., 2018. *Individualism and Collectivism*. Routledge, New York.
- Tsaousis, I., Kazi, S., 2013. Factorial invariance and latent mean differences of scores on trait emotional intelligence across gender and age. *Pers. Individ. Differ.* 54 (2), 169–173.
- Tubin, S., 1978. *The Influence of Socialization Patterns on the Distinctness of Interpersonal Perception and Autonomy of Kibbutz Adolescents*. University of Haifa [in Hebrew]. Unpublished master's thesis.
- van Ijzendoorn, M.H., Sagi, A., Lambermon, M.W., 1992. The multiple caretaker paradox data from Holland and Israel. *N. Dir. Child Adolesc. Dev.* 1992 (57), 5–24.

- Weiss, Y., Shilkret, R., 2010. The importance of the peer group in the Israeli kibbutz for adult attachment style. *Smith Coll. Stud. Soc. Work* 80 (1), 2–19.
- Wiseman, H., Lieblich, A., 1989. Intimacy and loneliness in the transition to adulthood. In: Annual Meeting of the Israeli Psychological Association, Haifa. .
- Wiseman, H., Lieblich, A., 1991. Individuation in a collective community. *Adolesc. Psychiatr.* 18, 156–179.
- Zack, H., 1976. The Rosenberg Questionnaire – Hebrew Version. Zmora Bitan, Tel-Aviv (Hebrew).
- Zeidner, M., Shani-Zinovich, I., Matthews, G., Roberts, R.D., 2005. Assessing emotional intelligence in gifted and non-gifted high school students: outcomes depend on the measure. *Intelligence* 33 (4), 369–391.