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Effects of A Zentangle-Textile-Art-Based Intervention On Self-Esteem and Quality of Life of Older Adults in Hong Kong

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ABSTRACT

In recent years, numerous studies have explored the effects of art and craft activities on health and well-being in various social contexts. In this pilot study, the beneficial effects of a structured Zentangle-textile-art-based (ZTAB) intervention on the self-esteem and quality of life of older Hong Kong adults in community settings were investigated. The ZTAB program framework involved Zentangle drawing practice and used Borba's five-stage self-esteem model to facilitate an evidence-based evaluation. A pre-experimental and one-group pretest-posttest design was employed. Twenty-one participants completed the protocol in three steps: 1) A demographic data survey; evaluating self-esteem using the Rosenberg Self-Esteem Scale (RSES) and assessing the quality of life using the brief form of the World Health Organization's Quality of Life instrument (WHOQOL-BREF) before the intervention; 2) Participation in three ZTAB workshops; and 3) RSES and WHOQOL-BREF evaluations and a close-ended questionnaire after the intervention. The study findings revealed that the ZTAB intervention was associated with significant improvements in the participants' self-esteem and quality of life, particularly in the psychological and social relationship domains of the WHOQOL-BREF. These findings suggest that future investigations into empowering community activities that promote improved self-esteem, spiritual health, and holistic wellness among older Hong Kong adults are warranted.

Keywords: Textile art-based intervention; older adults; Zentangle; self-esteem; quality of life.

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1. Introduction

Healthy ageing is a global issue, and therefore, further investigations are required to enhance physical and psychosocial well-being, quality of life, and holistic wellness in the older adult population. According to Hong Kong's Census and Statistics Department (2017), the population of those aged over 65 years in Hong Kong is projected to increase to 1.2 million by 2036, and older adults are expected to account for 25 per cent of Hong Kong's population by 2033. Ageing leads to physiological, mental, and social changes (Shahbazzadeghan et al., 2009). Older adults typically suffer from multiple physical and psychological problems. Age-related decline and impairment in health can easily lead to a reduction in

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physical activity, interpersonal communication, social engagement, self-esteem, and well-being (Roswiyani et al., 2017). An ageing population is associated with significantly higher healthcare expenditure. The Hong Kong Hospital Authority has been facing increasing pressure to provide specialist healthcare services to older adults. Thus, a growing interest in developing additional primary support, health promotion, and wellness interventions for older adults is being fostered.

This pilot study aims to investigate the benefits of ZTAB intervention on the self-esteem and quality of life of older Hong Kong adults in community settings. The unique study design with a pre-experimental and one-group pretest–posttest evaluation, structured ZTAB intervention program framework provides empirical evidence regarding the efficacy of the intervention program. Statistical analysis of the data obtained through RSES and WHOQOL-BREF instruments, and qualitative interviews revealed the significant improvements in the participants' self-esteem, the psychological and social relationship domains of quality of life. Therefore, this study will facilitate future investigations of the evidence-based service model for alternative treatment in Hong Kong. Moreover, the multimodal media approach of the ZTAB intervention program is unique and novel in this research context. The intervention program is expected to act as an early intervention of assertive community treatment to promote the psychosocial well-being for healthy ageing.

This paper contains a literature review identifying the research gap, methodology, results, discussion, conclusions and policy implications of the study.

2. Literature review

2.1 Efficacy of art-based intervention

Numerous studies have indicated that art participation and creative engagement are particularly beneficial for continued personal growth throughout later life. Ageing is associated with decreased self-esteem due to changes in physiognomy and social functions (Schieman & Campbell, 2001). Depression and low self-esteem are prevalent psychological problems among older adults, which affect the quality of life and health of those individuals and increase the risks of suicide or thoughts of death (Fiske et al., 2009). Low self-esteem among older adults is a prospective factor for depression (Orth et al., 2014). A decline in self-esteem has been associated with aggression, poor coping skills, and a decreased level of well-being in older adults (Stavropoulos et al., 2015). Conversely, an increase in self-esteem promotes older adults' sense of personal achievement, self-satisfaction, internal motivation, and personal skills, thereby strengthening self-confidence and mental health (von Humboldt & Leal, 2012). Quality of life refers to an individual perception of one's living situation, encompassing overall physical health, psychological state, perceived independence, social relationships, personal beliefs, and relationship to the main features of the surrounding environment (Willem et al., 1995). In addition, many circumstances and factors adversely affect the quality of life of older adults, including reductions in physical and mental health functioning, new restrictions in later life, inadequate social interactions, reduced capacity or greater dependency, and scarcity of financial resources (Gurková, 2011; Netuveli, 2006; Zaninotto et al., 2009).

Art therapy involves adopting unique nonverbal approaches in visual artistic creation to facilitate emotional exploration, mood adjustment, behaviour management, self-awareness and social skill development, anxiety reduction, and self-esteem enhancement (American Art Therapy Association, 2013). Art creation provides an opportunity for the enhancement of a sense of achievement and self-esteem (Hubalek, 1996), cognitive skills (Noice et al., 2004), physical and psychological health (Cohen et al., 2006), and personal growth (Reynolds, 2010) among older adults. The interactive modality of art-based therapy has been proposed as an effective intervention for facilitating self-expression, development of personal values, self-discovery, and autonomy; promoting self-esteem and positive emotions; and fostering relationships and friendships as well as a sense of belonging in older adults (de Guzman et al., 2011; Kim, 2013). Art therapy involves creative expression, engagement, and empowerment and offers an opportunity for older adults to elevate their quality of life, positive well-being, and psychological health (Greer et al., 2012; Im & Lee, 2014; Rentz, 2002).

As Atkins (2002: 3) argues, 'expressive arts is the practice of using imagery, storytelling, dance, music, drama, poetry, writing, movement, dream work and visual arts in an integrated way to foster human growth, development, and healing'. The process of creating textile arts is a multidimensional

experience and can be used as a healing process for people experiencing mental or physical discomforts (Meadow & Beyerle-Rutherford, 1999). Textile arts can calm people and make them feel centred when they become immersed in the sheer pleasure of the creative process. Textile art activities catalyse positive changes in individuals of all ages (Futterman Collier et al., 2016; Pollanen, 2015) and genders (Fontichiaro, 2018; Spencer et al., 2013). The nonverbal communication associated with art and craft tasks reportedly contribute to the well-being of older adults by promoting self-efficacy, interpersonal interaction, emotional expression, a sense of accomplishment and capability, and enjoyment (Castora-Binkley et al., 2010; Kim, 2013; Stevenson & Orr, 2013). Tse and Ho (2010) revealed that a multisensory craft programme in occupational therapy effectively reduced pain and enhanced psychological well-being and self-esteem among older adults. Craft-based textile activities including embroidery, quilting, knitting, and crocheting have provided creative outlets, community engagement, cross-cultural dialogue, and physical and mental stimulation that have promoted healthy ageing (Johnson & Wilson, 2005; Minahan & Cox, 2007; Schofield-Tomschin & Littrell, 2001; Turney, 2004). Creating textile artworks, sewing, knitting, and weaving involve simultaneous two-handed movements, and the tactile and repetitive nature of the creative process helps foster mental relaxation (Reynolds, 2000), generate therapeutic bilateral stimulation (Garlock, 2016), and reduce stress through kinaesthetic manipulation (Utsch, 2007). Craft and textile artworks creation facilitates personal achievement, appreciation, and fulfilment and develops positive emotions in and enhances the well-being of older adults through providing creative outlets (Burt & Atkinson, 2012; Gandolfo & Grace, 2010; Kenning, 2015; Liddle et al., 2013; Maidment & Macfarlane, 2011).

Zentangle art is an easy-to-apply mindful art therapy intervention that does not require any special tools, artistic talent, or educational knowledge. Zentangle promotes concentration and meditation by unplanned and abstract drawing, through the specific method from an ensemble of simple, structured patterns, repeated strokes or tangles on a 3.5-inch square paper tile (Malchiodi, 2014). Studies have reported the effectiveness of practising Zentangle art in stimulating spiritual healing, raising self-esteem, enhancing self-confidence, promoting positive mood, reducing stress, fostering relaxation, and stimulating new perspectives (Krahula, 2012; Malchiodi, 2014; Roberts & Thomas, 2022; The Brunswick News, 2014). Uttley et al. (2015) observed that regular practice of Zentangle art helped enhance the quality of life of people with nonpsychotic mental health disorders. A pilot study conducted by Masika et al. (2020) examined the potential benefit of Zentangle art in improving the cognitive and psychological well-being of older adults with mild cognitive impairment.

To date, few studies have investigated the use of Zentangle textile arts and fashion in art therapy for older adults with low self-esteem. Moreover, few studies have demonstrated the technique's therapeutic effects and the relationships among body image, clothing, and quality of life. Clothing can alter one's mood, enhancing confidence and allowing individuals to express their desired appearance (Kang et al., 2013). Consequently, studies investigating the effects of art therapy on the psychological health of older adults in Hong Kong society are lacking. The present study proposed multimodal media approach by integrating Zentangle drawing practice, Borba's five-stage self-esteem model and fashion prototyping for healthy ageing. It makes the first attempt in the field to systematically evaluate the effects of ZTAB intervention and exercise intervention in positive self-esteem, identity development and the holistic wellness contribution of older Hong Kong adults.

3. Data and methodology

3.1 Participants and recruitment

A pre-experimental and one-group pretest–posttest design was adopted for the evaluation of ZTAB interventions in this study. Twenty-one older adults were recruited from four collaborative service agencies in Hong Kong, namely the Baptist Oi Kwan Social Service, Hong Kong Sheng Kung Hui Lok Man Alice Kwok Integrated Service Centre, New Life Psychiatric Rehabilitation Association, and The Hong Kong Polytechnic University's Institute of Active Ageing. For inclusion in the study, the participants were required to (a) be aged 60 years or older; (b) be fluent in Cantonese or Mandarin; (c) identify themselves as having low self-esteem, with a score of <15 points on the Rosenberg Self-Esteem Scale (RSES); and (d) be independently assessable and willing to provide data for research purposes. The exclusion criteria were (a) severe medical conditions with physical immobility; (b) an inability to

communicate with others; (c) severe hearing or visual impairment; (d) a diagnosis of severe dementia or severe depression; (e) an RSES score of >15; (f) serious suicidal behaviours and thoughts; (g) aggression and violent behaviour; and (h) a lack of willingness to provide data for research purposes or severe brain pathology. Informed consent was obtained before the intervention was conducted, and the study protocol was approved by the Human Subject Ethics Subcommittee of The Hong Kong Polytechnic University (Reference number: HSEARS20200817001 on 17 Aug 2020).

3.2 Measurements

Data were collected using various methods; a survey of sociodemographic characteristics was conducted prior to the intervention. Additionally, RSES and short-form World Health Organization Quality of Life (WHOQOL-BREF) assessments were conducted immediately prior to the intervention (T₀) and repeated at a postintervention test (T₁). These tests were administered by social workers and the researchers on an individual basis to obtain safe parameters for facilitating effective clinical interventions and health care planning (de Oliveira et al., 2015). Close-ended ZTAB intervention questionnaires were issued by the researchers to the participants after the intervention (T₁). The effectiveness and feasibility of the ZTAB intervention were evaluated by comparing the participants' assessment scores before and after the programme and by analysing the data from the close-ended questionnaires.

The sociodemographic data survey was designed by the principal researcher and inquired into the participants' information, namely age, gender, education level, marital status, retirement status, nationality, economic status, and experience in Zentangle and textile arts at baseline (T₀).

The RSES (Rosenberg, 1965) was used as the screening instrument for recruitment of the participants and for comparisons of the preintervention and postintervention scores. The RSES questionnaire has 10 items that the participants are asked to respond to in accordance with their current feelings. Scores of 15–25 are considered within the normal range, and scores of <15 indicate low self-esteem. The RSES involves a 4-point scale (1 = strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree). The Cronbach's alpha was 0.709 in this study.

The WHOQOL-BREF instrument contains 26 items that are evaluated on a 5-point Likert scale. These items belong to one of four domains: physical health, psychological health, social relationships, and environment (WHOQOL Group, 1998). The WHOQOL-BREF has been used as a diagnostic instrument in numerous studies to evaluate individuals' perceptions of health (Krägeloh et al., 2011). It is a reliable and valid assessment tool for the preliminary evaluation of participants' perceived quality of life with a Cronbach's alpha score of 0.79 (Skevington et al., 2004).

The ZTAB intervention questionnaire was designed on the basis of the 'Art-based Intervention (ABI) Questionnaire' (Snir & Regev 2013). The ABI Questionnaire includes 50 items on a 7-point Likert scales to examine the creative process experienced in art therapy and educational interventions. The modification of the ABI Questionnaire was developed to contain close-ended questions reflecting the perceived experience on emotions, thoughts and creative perceptions in various stages of the Zentangle textile art making process. Variables were reduced to 15 close-ended question items in considering the accessibility and capabilities of the respondents in the context of community-based art intervention. The refined questionnaire was reviewed and verified by a registered art therapist (see Table 4). The ZTAB questionnaire was issued to the participants after the intervention (T₁) on individual basis administrated by the research assistant.

3.3 Data analysis

The data were analysed using SPSS version 22.0. Descriptive statistics (i.e. percentages, means, and standard deviations [SDs]) were used to analyse the demographic information of the participants. A paired sample t test was used to verify the association between the pretest and posttest parameters. A p value of <0.05 was considered statistically significant for all comparisons, and the data are reported to two decimal places where significant. Cohen's d statistic was used to determine the effect size (Cohen, 1988). The Cohen's d provided a standardized estimation of the difference between the pretest and posttest means and SDs, with small, medium, and large effect size thresholds of 0.20, 0.50, and 0.80, respectively. The sociodemographic data were summarized using the descriptive summary measures, with presentation of the percentages for categorical variables.

3.4 ZTAB intervention

A structured Zentangle textile arts and fashion programme was conducted over three 3-hour sessions weekly over a period of 3 weeks. Throughout the study, the principal researcher, a certified Zentangle teacher and the codesigner (a research assistant) attended all the sessions as the facilitators of the interventions. The sessions were offered in the fashion design studio of the university campus. For intervention fidelity, the principal researcher and art therapist delivered a 60-minute training session for the certified Zentangle teacher and the codesigner 1 month before the intervention. During the training session, real-time peer observation of the rehearsal session and reflective work were implemented. The principal researcher and art therapist demonstrated the skills required for building therapeutic relationships with the participants, techniques of expressive textile arts and craft-making, and theory of codesign process model. The operational staff were provided guidelines and instructions with the ZTAB intervention manual, which outlines the research protocol, assessment procedures, informed consent form for participants, copies of all outcome measures and boundaries of the participants' confidentiality. The aim of this session was to achieve a common understanding regarding the theoretical and clinical fundamentals of the intervention model and to develop the therapeutic knowledge required for the study.

In this study, the textile arts and fashion programme framework was developed on the basis of the practice of Zentangle drawing (Roberts & Thomas, 2022) and a self-esteem model comprising the following five stages: (a) sense of security, (b) sense of selfhood, (c) sense of affiliation, (d) sense of mission, and (e) sense of competence (Borba 1989, 1994). By increasing self-esteem, the key aims of the programme were to: (a) develop a psychologically healthy and caring atmosphere, (b) foster personal expression, (c) impart new knowledge and skills, (d) facilitate meditation and fulfilment, (e) reinforce self-descriptions, (f) enhance self-awareness and self-regulation (Davis, 2015), (g) promote connections to inner self and peace (Hall 2012), (h) explore the transcendent experience (Miller, 2010), (i) improve decision-making and problem-solving skills, (j) foster interaction and mutual exchange (Brown, 2001), (k) promote peer approval and support (Johnson & Ferguson, 1990), (l) build self-praise and self-appreciation for accomplishments, and (m) empower individual abilities and strengths (Myers et al., 2011; Table 1). The three structured sessions of the ZTAB intervention were delivered as follows.

Session I. The 3-hour workshop began with a 30-minute self-administered pretest that included the RSES and WHOQOL-BREF assessments and sociodemographic data collection at baseline (To). A calming exercise followed as a warm-up. The concept, theories, and practices of Zentangle art and expressive textile arts were then introduced (Figure 1). This session provided a comprehensive description of the theory of Zentangle drawing and allowed the participants to apply the skills of Zentangle art. The participants were guided by the codesigner to draw corner dots, borders, multiple lines, sections, and simple shapes in a sketchbook to express themselves (Figures 2 and 3). This session helped develop the older adults' interest in Zentangle and included facilitation of enjoyment and relaxation. Self-expression is an essential factor for self-esteem development (Scott, 1999; Woodhill & Samuels, 2003). At the end of this session, the participants were encouraged to interpret their Zentangle art creations on a fabric pouch and formulate their individual design goals for the prototype they would develop during the programme (Figure 4). Setting realistic goals and striving for achievements accordingly are processes widely



Figure 1. Session I of the Zentangle textile arts and fashion programme. —

recognized as crucial to personal fulfilment (Canfield, 1989).

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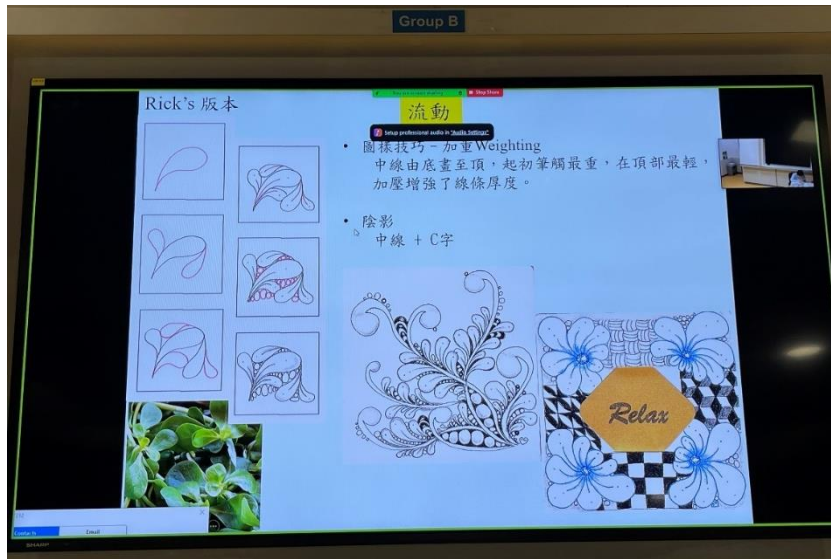


Figure 2. Introduction to Zentangle practice.

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Figure 3. Older adults completing Zentangle drawings.

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Figure 4. Zentangle art creations on fabric pouches.

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Session II. In the second session, the concepts, theories, and practices of textile arts and fashion were introduced. Art and craft tasks (30 minutes) which included the creation of self-portraits, textile art collages, and fashion styles were conducted individually to facilitate the development of self-identity and self-awareness. Pattern making and sewing techniques were demonstrated (Figure 5), and the participants



followed the instructions of the codesigner to individually develop practical, organizational, and problem-solving skills. A codesign discussion (20 minutes) among participants was facilitated by the codesigner to help develop a codesign plan in a mutually supportive and secure group atmosphere (Figure 6). A creative dialogue was established to identify and define the design problems and requirements in accordance with the opinions and expectations of the participants; this practice is associated with the optimal dressing styles or functional design needs (LaBat & Sokolowski, 1999). Basic expressive textile arts and craft-making techniques such as printmaking, fabric collaging, hand painting, and beading were demonstrated. Textile art materials (e.g. fabric swatches and paint, yarns, beads, sewing materials, knitting needles, crochet hooks) were provided. The participants were taught to apply Zentangle patterns on fabric or textile products by employing crafting techniques (Figure 7). The textile art and craft activities helped stimulate tactile and sensory functions and enhance the participants' sense of relaxation and calmness.

Figure 5. Sewing practice.

Note. From The Hong Kong



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Session III.
Zentangle textile artworks or



prototypes were developed (Figure 8). Prototypes were adjusted after a fitting session initiated by the participants. This style presentation helped improve self-esteem, develop self-identity, and facilitate personal achievement. Peer reviews were conducted in the final session, and each participant was invited to share their creative work and express the feelings and thoughts they had during the programme activities with the codesigner and their peers. This interactive sharing opportunity allowed the participants to share their insecurities and thus, the could raise esteem and foster a achievement (Hong codesign team codesigner, project certified Zentangle communicated with ensure mutual allowing the skills and mutual support and 2020), promote



engagement (Riley et al., 2013), and foster relationships as well as a sense of belonging (Burt & Atkinson, 2011; Nolen-Hoeksema, 2001). The textile artworks and prototypes created were issued to the participants at the end of each session. Each

Figure 7. Application of Zentangle patterns by using textile crafting technique.

participant was required to complete the RSES, WHOQOL-BREF, and the ZTAB intervention questionnaire after each sharing session.

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Figure 8. Zentangle textile artworks and prototypes.

Note. From The Hong Kong Polytechnic University, 2021. Copyright 2022 by The Hong Kong Polytechnic University.

Table 1. ZTAB intervention programme framework.

Week/ session/ duration	Self-esteem stages involved from model of Borba (1989, 1994)	Theme/content	Aims	Assessment schedule
1/	<p>Sense of security</p> <p>Sense of mission</p> <p>Sense of affiliation</p> <p>Sense of selfhood</p>	<p>Welcome and Introduction</p> <ul style="list-style-type: none"> • Exercise: Mind and heart quietening (Roberts & Thomas, 2022) and goal setting 	<ul style="list-style-type: none"> • Develop a psychologically safe and caring atmosphere • Foster personal expression 	<ul style="list-style-type: none"> • Sociodemographic data collection at baseline • Pretest: RSES; WHQOL-BREF



I/ 3 hours	Sense of selfhood Sense of mission	<ul style="list-style-type: none"> • Zentangle art task: Drawing corner dots, connecting dots to form borders and sections (Roberts & Thomas, 2022), and creating multiple lines and simple shapes as an abstract means of expression (Betensky, 1995) on sketch book and fabric pouch 	<ul style="list-style-type: none"> • Acquire new knowledge and skills • Facilitate meditation and fulfilment 	<ul style="list-style-type: none"> • Reinforce core self-descriptions • Enhance self-awareness and self-regulation (Davis, 2015) • Connect inner self and peace (Hall, 2012) • Explore transcendent experiences (Miller, 2010) • Improve decision-making and problem-solving skills
2/ II/ 3 hours	Sense of selfhood Sense of affiliation Sense of competence	<ul style="list-style-type: none"> • Hands-on, nonjudgemental textile practice sessions • Exercise: Self-understanding and self-expression • Demonstration: Introduction to pattern making and sewing techniques • Textile art and craft task: do-it-yourself stamping, printmaking, hand painting, fabric collaging, beadworks, calming routine-like knitting, crocheting, embroidery, other embellishment and heat-transfer printing • Peer review • Exercise: Peer recognition, self-appreciation, creative dialogue, and follow-up goals • Zentangle art task: Signing to acknowledge the creations and admiring others' artworks (Roberts & Thomas, 2012) • Textile art and craft task: Prototype fitting, adjustment, and style presentation 	<ul style="list-style-type: none"> • Foster interaction and mutual exchange (Brown 2001) • Promote peer approval and support (Johnson & Ferguson, 1990) • Develop self-praise and appreciation of personal accomplishments • Enhance individual abilities and strengths (Myers et al., 2011) 	<ul style="list-style-type: none"> • Posttest: RSES, WHQOL-BREF, and ZTAB intervention questionnaire

4. Results and discussion

A total of 21 older adults aged over 60 years old with low self-esteem participated in this study. All the participants completed the intervention, with an overall attendance rate of 100 per cent. Thus, all participants completed the sociodemographic questionnaires at baseline as well as the pretest and

posttest questionnaires. As detailed in Table 2, the majority of the participants (71%, $n = 15$) were female. Regarding the age distribution, those aged 60–69, 70–79 and ≤ 80 years accounted for 52.4% ($n = 11$), 42.9% ($n = 9$), and 4.8% ($n = 1$) of the participants, respectively. Among the participants, 71% had no experience in textile arts and 86% of them had no experience in Zentangle art. Most of the participants were married (62%, $n = 13$) and had received formal education. Approximately 76% had retired, and most had stable economic status. The average RSES pretest score of the participants was 13.05 ($SD = 1.16$), indicating low levels of self-esteem.

Table 2.

Sociodemographic information of participants.

Note. $N=21$.

Parameter	Number, percentage ($N = 21$)
Age, years	
60–69	11 (52.4%)
70–79	9 (42.9%)
80 or over	1 (4.8%)
Gender	
Female	15 (71.4%)
Male	6 (28.6%)
Education level	
Never received any	3 (14.3%)
Elementary education	10 (47.6%)
Secondary education	6 (28.6%)
Tertiary education or above	2 (9.5%)
Marital status	
Single	2 (9.5%)
Married	13 (61.9%)
Widowed	6 (28.6%)
Hong Kong citizen	
Yes	21 (100%)
No	0
Retirement	
Yes	16 (76.2%)
No	5 (23.8%)
Economic status	
Good	7 (33.3%)
Moderate	10 (47.6%)
Poor	4 (19%)
Past experience in textile arts	
Yes	6 (28.6%)
No	15 (71.4%)
Past experience in Zentangle art	
Yes	3 (14.3%)
No	18 (85.7%)

The data collected from the pretest and posttest were tabulated to investigate the effectiveness of applying the ZTAB intervention as an adjuvant treatment and meditation to improve the self-esteem and quality of life of older adults. As indicated in Table 3, paired sample t tests were conducted to determine the differences between the mean scores of the pretest and posttest of the RSES and WHOQOL-BREF for the 21 participants, respectively. Significant improvements in the participants' self-esteem were observed. The results revealed that the pretest and posttest RSES scores

differed significantly, with means of 13.05 ($n = 21$, $SD = 1.16$) at the pretest (T_0) and 16 ($n = 21$, $SD = 1.61$) at the posttest stages (T_1 , upon the completion of the ZTAB intervention), where $t(20) = -9.23$, and $p < 0.001$ at the 5 per cent significance level. All null hypotheses were rejected.

Moreover, the results of the WHOQOL-BREF indicated a significant enhancement in the psychological quality of life of the participants over the course of the ZTAB intervention (domain 2; $t(20) = -8.26$, $p < 0.001$), with means of 47.76 ($n = 21$, $SD = 6.34$) and 57.05 ($n = 21$, $SD = 7.47$) at the pretest (T_0) and posttest (T_1) stages, respectively. In the social relationships domain (domain 3; $t(20) = -5.53$, $p < 0.001$), means of 52.81 ($n = 21$, $SD = 9.1$) and 61.52 ($n = 21$, $SD = 7.91$) were recorded at the pretest and posttest stages, respectively. A p value of ≤ 0.05 was considered statistically significant. As the results indicated, no significant differences were observed in the domain of physical health and environment (Table 4).

Table 3.

Results of Paired Samples t test.

Participants $n = 21$	Paired t test					
	Mean	SD	SEM	t value	df	Significant (two-tailed) Pre vs. Post
WHOQOL-BREF						
Transformed score (0–100)						
Physical health (Domain 1)						
Pretest	58.67	8.98	1.96	-1.52	20	0.14
Posttest	59.86	8.88	1.94			
Psychological (Domain 2)						
Pretest	47.76	6.34	1.38	-8.26	20	<0.001
Posttest	57.05	7.47	1.63			
Social relationships (Domain 3)						
Pretest	52.81	9.1	1.99	-5.53	20	<0.001
Posttest	61.52	7.91	1.73			
Environment (Domain 4)						
Pretest	51.57	4.79	1.05	-1.85	20	0.079
Posttest	52.76	5.1	1.11			
Rosenberg Self-Esteem Scale						
Pretest	13.05	1.16	0.25	-9.23	20	<0.001
Posttest	16	1.61	0.35			

Note. $N = 21$. SEM=standard error of the mean; df= degrees of freedom.

Table 4 presents the results of the programme evaluation performed by the participants. The participants generally considered the experience positive, with exceptionally high overall satisfaction rates with the programme. These results are consistent with the RSES and WHOQOL-BREF evaluation findings, with the participants indicating significant enhancements in self-esteem, self-efficacy, personal development, self-perceived psychological health, mutual support, and social connection. However, the applicability of the newly acquired knowledge and problem-solving skills in daily life was slightly lower than that of other categories associated with personal and social capabilities.

Table 4.

Results of ZTAB intervention questionnaire.

Evaluation of ZTAB intervention questionnaire ($N = 21$)		Percent
1	The content of the programme was interesting.	95.2
2	I received sufficient guidance to create artwork during the programme.	95.2
3	I was able to express myself through the Zentangle art and craft creation process.	95.2
4	The programme encouraged personal achievement and fulfilment.	90.5
5	I was able to develop positive self-identity through the programme.	85.7
6	I was able to understand and appreciate myself during the programme.	85.7

7	I gained new insight into my personal life through attending the programme.	90.5
8	I was able to solve the problem(s) and overcome the challenge(s) that arose during the programme.	76.2
9	I was able to apply the newly acquired knowledge and skills in my daily life.	76.2
10	I was able to meet new friends and interact with peers through the programme.	95.2
11	The programme facilitated mutual support and exchange among programme participants.	95.2
12	I would share my experience regarding the programme with my friends and relatives.	81
13	I was motivated to continue creating Zentangle textile arts and crafts.	85.7
14	The Zentangle textile artwork and fashion prototype allowed me to tell my personal stories.	81
15	The Zentangle arts and crafts process allowed me to reminisce on my past life experiences.	95.2

Note. N=21. Modified from the 'Art-based Intervention (ABI) Questionnaire' by Snir, S., & Regev, D. (2013). ABI – Art-based intervention questionnaire. *The Arts in Psychotherapy*, 40(3), 338-346.

In this pilot study, the therapeutic effects of a ZTAB intervention (integrating mindful art therapy and fashion prototyping) on the enhancement of self-esteem and the quality of life of older adults were examined. Additionally, the experiences of being involved in this unique art-based intervention for the participants older adults with low self-esteem and no or little experience with Zentangle art and textile arts were recorded. The ZTAB intervention yielded significant effects on improving self-esteem, psychological health, and social connection. These findings are consistent with those of Hess et al. (1984), who contended that clothing enhances the appearance, self-esteem, personal expression and social acceptability of older adults who rely on mechanisms that support their self-esteem. The intervention helped the participants develop self-confidence, self-efficacy, and self-worth as well as express personal feelings during the textile art creation, meditation, and sharing sessions in a group setting; as Franklin (1992) suggested, art engagement enhances self-esteem through the validation of each individual's uniqueness, an increased sense of accomplishment, and affirmation from self and peers. Specifically, Zentangle-based mindful art therapy improved the emotion regulation of participants by encouraging pleasurable engagement, the pursuit of excitement, and enthusiastic commitment (Hui & Ma'rof, 2019). The findings revealed associations between assessment of personal appearance, clothing, and quality of life. This finding is consistent with Chowdhary (1991), who reported that clothing can be used as coping mechanisms by older women in geriatric institutions, allowing these women to improve their senses of selves, self-esteem, and quality of life.

In addition to the effect of community engagement on self-esteem and quality of life, the findings of this research verified the findings of earlier studies indicating that craft-based textile activities in community settings improve the self-esteem of older adults (Johnson & Wilson, 2005; Minahan & Cox, 2007; Reitzes et al., 1995; Schofield-Tomschin, 2001; Turney, 2009). The participants' self-esteem was significantly associated with social connection and community activities such as cocreation of artworks, interacting with peers, and sharing skills and experiences through the codesign process. Traditionally, older individuals tend to undergo major life transitions after retirement, which leads to a decline in social participation. Clothing can facilitate communication in social systems (Creekmore, 1974). The five-stage self-esteem model (Borba, 1989, 1994) also indicates that interaction and mutual support can increase individuals' self-esteem (Hong et al., 2012) by encouraging individuals to express, recognize, accept, and appreciate oneself in trusting and psychologically healthy relationships (Betensky, 1995; Myers et al., 2011). This study suggested that older individuals can participate in art-based and creative activities in community settings to sustain self-esteem and quality of life for healthy ageing. However, having participants to share their creative works and express individuals' thoughts among peers have a potential leading to criticism. Such peer criticism can reduce self-esteem and motivation of the mentally vulnerable individuals. Collie et al. (2006) suggested that additional precautions could be implemented to ensure the emotional safety of emotionally-vulnerable subjects by: (a) obtaining informed consent in relation to the artistic experience, including dissemination of artworks and art-evoked emotions; (b) developing ground rules for non-judgmental

practice review; (c) ensuring protection of anonymity and confidentiality; (d) promoting freedom of choice; (e) building structure and predictability; and (f) facilitating interim assumption under art therapists' supervision.

This study also indicates that the use of quantitative methods to understand the effects of Zentangle art, textile craft activities, and fashion prototyping on psychosocial well-being warrants consideration. Previous qualitative studies have demonstrated the beneficial effects of crafting on the spiritual health and holistic wellness of older adults. However, this study provided verified statistical evidence of the improvement of the older adult participants' psychosocial well-being through qualitative interviews and the RSES and WHOQOL-BREF instruments. This enabled the evaluation of not only the effects of textile arts and crafting on specific aspects of well-being but also the impact of the art-based intervention itself. This overall assessment is particularly crucial because art and design are increasingly being integrated into the healthcare discipline, where both scientific evidence, methodology, and intervention approaches are evaluated to demonstrate an intervention's effectiveness.

5. Conclusions and policy implications

5.1 Limitations

Some limitations of the study are to be noted. First, being a pilot study, a relatively small sample size was used. The participants were limited to the members of four community agencies servicing older adults. Consequently, the results cannot be assumed to be generalizable to older adults with other attributes who are housed in community day care centres and residential care homes. Future studies should include more diverse samples in accordance with considerations of age-correlated social status, income levels, and the health conditions of Hong Kong. Second, given that the sample was not randomly assigned to the intervention group with variations in experience with the creation of Zentangle and textile arts, further research must involve true experimental, pretest–posttest designs with randomized control groups to avoid ascertainment bias. The outcomes of this study, which were based on only the pretest and posttest results obtained before and immediately after the intervention, respectively, indicate that this pilot study was inconclusive regarding the ZTAB intervention's long-term effects on the older adult population. In future studies, researchers may consider including follow-up assessments for at least 6 months postintervention and qualitative in-depth interviews that elucidate the feelings, opinions, insights, and experiences of the intervention participants (Denzin, 1989). Finally, long-term studies in other elderly service agencies and multidisciplinary collaborations with art therapists, registered mindfulness practitioners, healthcare professionals, and community service personnel are suggested to further verify the effectiveness of Zentangle textile arts and fashion programmes. Moreover, more rigorous experimental designs should be applied in longitudinal studies to ensure intervention fidelity.

5.2 Conclusions

Notwithstanding these limitations, this study demonstrated that ZTAB interventions exert positive effects on the self-esteem of older adults, which positively influence those adults' quality of life, particularly in terms of psychosocial well-being. The study participants were motivated to undertake research, express their feelings, engage in activities, and share skills and experiences with others during the programme. Thus, the arts and craft activities empowered the participants and promoted personal, social, and spiritual satisfaction. The positive experiences of the older adults who engaged in the present Zentangle textile arts and fashion programme suggest the intervention's potentially life-changing possibilities. Thus, in this study, an easy-to-deliver, cost-effective art-based intervention was introduced as a nonpharmacological alternative therapy programme that included meditation in its routine services for the older adults from local community service agencies who participated. Previous research has generally neglected the therapeutic effects of art-based interventions and the relationships between art, clothing, and well-being for underprivileged groups in Hong Kong. Therefore, this study provides a novel contribution to the field. In the context of an ageing global population, more attention should be given to the self-accomplishment and sense of social belonging that older people can derive from participating in the art and crafts activities as means of expression. Such activities may increase the spiritual health and holistic wellness of older adults,

facilitating healthy ageing. With the promising results of this pilot study, social welfare officers, counsellors, regional service administrators and health authorities are recommended to adopt such art and crafts interventions as adjuvant treatments in accordance with each individual's capacity to improve the quality of daily life for older people, enhance public health systems, and promote long-term psychosocial collaborations.

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