

Positive Psychology Intervention for Promoting Mental Health, Life Satisfaction and Happiness Level among Adolescents

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ABSTRACT

Background: Adolescents' behavioral and emotional disorders denote a considerable public health problem in developing countries. Hence, positive psychology intervention plays a prominent role in promoting mental health and increase happiness among adolescents. This study aimed to evaluate the effect of positive psychology intervention for promoting mental health, life satisfaction, and happiness level among adolescents.

Method: A quasi-experimental research one group pre-test and post-test design were used with baseline data collected from second and third-year preparatory students from Saris Alliyen Aljadida preparatory school, Menoufia governorate, Egypt. Seven instruments were utilized; a constructed interview questionnaire, Brief Symptom Inventory, General Self-Efficacy Scale, Life Orientation Test-Revised, Rosenberg Self-Esteem Scale, Satisfaction with Life Scale, and The Oxford Happiness Questionnaires.

Result: the current study's findings proved there were significantly greater increases in self-efficacy, self-esteem, optimism, and life satisfaction scores from pre-intervention to post-intervention. Also, there was significantly greater increases in happiness level from pre-intervention to post-intervention.

Conclusion: This study showed the importance of the application of positive psychology intervention for promoting mental health and increase life satisfaction and happiness levels among adolescents.

Recommendation: Based on the study's findings, it was recommended the school nurse regularly assess all

Keywords: Positive Psychology, Adolescence, mental health, happiness, Self-Esteem, Self-Efficacy, Satisfaction with life, Optimism

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adolescents to identify those with low levels of happiness and life satisfaction. Also, the school nurse applies positive psychology intervention to prevent depression, promote mental health and increase life satisfaction and happiness levels among adolescents in the school setting.

INTRODUCTION

Adolescence is a complex period described by multiple changes, challenges, new opportunities and experiences. Adolescence (from ages 10 to 19 years) is a transitional period between childhood and adulthood. In this period, major physical, psychological, cognitive, social changes as stressful, confusing, difficult, and unsettling that require successful negotiation from adolescents. The period is also discernible by increased identity formation and autonomy which may further influence adolescents' values, selections, behaviors, and attitudes [1]. Worldwide, one in six individuals is aged 10-19 years [2]. In Egypt, 9.4% of populations are 10-14 years old and another 9.7% are aged 15-19 years [3; 4].

Adolescents' behavioral and emotional disorders denote a significant public health problem in developing countries. These disorders cause stress for adolescents as well as their families, community in the short and long term [5] and can range from minor difficulties to more severe ones [6; 7]. Worldwide, The Global Burden of Disease project reported that 23-24% of adolescents aged 10-19 years have mental health and behavioral problems and half of these conditions start by age 14 [2]. Epidemiological statistics on mental/behavioral disorders among adolescents in developing and Arab countries are restricted [6; 8]. In Egypt, 18.5% of adolescent students had behavioral problems with the highest percentage had emotional problems (19.1%) conduct problems (14.3%), (13.4%) of adolescent students had hyperactivity problems and lastly peer relations problems (7.6%) [9].

The World Health Organization well-defined mental health as a state of well-being in which individuals recognize their abilities to work efficiently, cope with the normal stresses of life and ability to contribute to his or her community. It includes the ability to emote, think, interact, earn a living, and enjoy life [2]. Well-being has been defined as not merely the absence of psychological distress, but the existence of positive indicators of best functioning on academic, social, and physical health outcomes [10]. Moreover, it has consequences on self-esteem, school attendance, educational accomplishment, behavior, social consistency, and future health. [11; 5].

Diener et al. [12] announced that life satisfaction mentioned as person's subjective and global evaluations of his or her life positivity as a whole or with specific life dimensions such as family life or school experience. Some studies have shown adolescents with high levels of happiness and life satisfaction. [13; 14]. Happiness has been positively correlate with adolescents' life satisfaction [15]. Also, there is a strong connection between self-esteem and happiness since a high level of self-esteem leads to happy and productive lives, and that it is a direct predictor of happiness [16]. Past studies suggest that there is a direct relation between the level of self-esteem and happiness [17; 18]. Moreover, there are positive relationships between self-esteem, psychological well-being, affect balance, emotional self-efficacy, and happiness [19]. Besides, self-efficacy plays

an important role in promoting mental health and there was a positive relationship between self-efficacy, subjective well-being, and life satisfaction [20].

Happiness is closely related to subjective well-being and indicates that adolescents think and feel that their lives are going well [21]. Happiness may differ between adolescents and adults, many adolescents experience stress whereas developing during this transitional period, experiences of accumulated stress are predictors of psychological difficulties and distress and can threaten adolescents' healthy development and well-being [22]. Happiness is a valued goal, not only for feel good, but because it is associated with successful outcomes in life who sequentially will contribute to the health and well-being of the community [11]. Also, Seligman [23] proved that optimism is correlated with various positive outcomes including better physical and mental health, increased school success, and better-coping strategies with stressors. Adolescents' happiness and well-being can be enhanced through intentional activities knowledgeable through positive psychology interventions [24]. Positive psychology interventions aimed at enlightening positive feelings, positive cognitions, and positive behaviors [25], strengthen capacity to regulate emotions, enhance alternatives to risk-taking behaviors, figure flexibility for hard situations and stimulate supportive social environments among adolescents. So that, protecting, promoting, and restoring mental health is considered a vital concern of persons, communities, and societies throughout the world [2].

Many studies demonstrated the effectiveness of positive psychology interventions such as gratitude [26], life review therapy and self-management positive reminiscence, optimism interventions to have more positive thoughts and experiences, which, in turn, increased happiness [27]. Gratitude, goal setting, and character strengths embattled the potential for increased happiness boosted well-being successfully promote subjective well-being as well as reduce adolescents' psychiatric symptoms [28]. Positive psychology intervention is valuable for normal, well-adjusted adolescents and those suffering from both subclinical symptoms and clinical disorders to increase positive emotions as well as producing positive thoughts and experiences [25; 29].

The National Association of School Nurses stated that the presence of a school nurse in every school every day permits the school nurse to build trusting relationships with adolescents and serve a significant role in the assessment, identification, intervention, reporting, referral, and follow-up of adolescents in need [30], promote mental wellness, introduce mental health screening, and intervention programs for ongoing treatment of mental health, emotional and behavioral disorders of adolescents, as she often a student's first point of entry into behavioral health services for mental illness and behavioral disorders [31].

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Significance of the Study

Adolescents' emotional and behavioral problems represent a significant public health problem in developing countries. In Egypt, there is an insufficiency of epidemiological studies examining the problem [9]. Globally, the consequences of not addressing adolescent emotional, depression is one of the significant reasons for illness and infirmity among adolescents, anxiety is the ninth leading cause amongst adolescents from 15 to 19 years and sixth for those aged 10-14 years, behavioral disorders are the second prominent cause of disease burden in adolescents aged 10-14 years and the eleventh leading cause amongst older adolescents aged 15-19 years, suicide is the third leading cause of death in 15-19-year-olds. An estimated 62000 adolescents died in 2016 as an outcome of self-harm. Nearly 90% of the world's adolescents live in low or middle-income countries and more than 90% of adolescent suicides are among adolescents surviving in those countries [2]. In Assiut district/Egypt shown a high prevalence of behavioral and emotional problems with an obvious enormous negative impact. About 45 % of adolescents had emotional and/or behavioral problems, involved conduct (36.0%), emotional (42.3%), peer problems (5.0%), prosaically (28.5%) and hyperactivity problems (24.8%). Emotional disorders were significantly higher (40.4%) among females. However, conduct problems were more predominant (47.5%) among males [5].

Behavioral disorders extend to adulthood, damaging physical and mental health, and obstruct opportunities to lead satisfying lives as adults. Protecting adolescents from adverse experiences are critical for their physical and mental health and well-being, positive psychology interventions are intended to cultivate positive emotions, cognitions, and behavior [2; 32] which may positively influence up to 40% of an adolescent's subjective happiness or well-being [33; 28] and, in turn, improve the happiness of the adolescent performing them" [34]. Also, Okwaraji et al [35] conducted a study to evaluate the relationship between personality traits, happiness, and life satisfaction in adolescents. They concluded positive psychology measures schools that will impact positively the adolescents profiles of happiness and life satisfaction. Moreover, there was a lack of Egyptian studies evaluate the impact of positive psychology intervention on adolescents' mental health, life satisfaction, and happiness. This study aims to evaluate the impact of positive psychology intervention on promoting mental health, life satisfaction, and happiness level among adolescents.

Conceptual Definitions

Positive psychology interventions are methods of treatment or intended actions aimed at promoting positive feelings, positive cognitions, and positive behaviors (Antoinea, 2018). Also, Positive psychology interventions' outcomes are measured by monitoring changes in wellbeing as reflected in increased levels of positive affect, life satisfaction, and happiness combined with decreased negative affect and improved mental health [36].

Mental health:- is the effect of an individual's well-being on the realization of his abilities, coping with normal life stresses, productive work, and contribution to their community [37].

Life satisfaction: the way a person evaluates life and how he or she feels about where it is going in the future [38].

Happiness: "overall appreciation of one's life as a whole" and consists of both an effective and a cognitive evaluation of life [39].

Operational Definitions

Mental health:- Mental health is more than just the absence of mental disorders or disabilities. A state of well-being that includes the biological, social, or psychological factors that granting an individual's mental state and their ability to work within the community [40; 41]. In this study, the adolescents' mental health was measured by the Brief Symptom Inventory (BSI) was developed by [42].

Life satisfaction: is a measure of well-being to assess mood, satisfaction with relationships, accomplished goals, self-concepts, and self-perception ability to cope with daily life [43]. In the this study, it will be measured by the Satisfaction with Life Scale [38].

Happiness: the adolescents' evaluations and judgments concerning different life areas. In this study, it will be measured by using the Oxford Happiness Questionnaires (OHQ) [44].

Research hypothesis

- 1- Adolescent will have lower levels of psychological distress symptoms post-intervention than before
- 2- Adolescents' self-efficacy, self-esteem, optimism, life satisfaction will be improved post-intervention than before
- 3- Adolescents' happiness level will be increased post-intervention than before

Research Questions

- 1- Are there any correlations between adolescents' brief symptoms, general self-efficacy, optimism, self-esteem, and satisfaction with life and happiness after positive psychology intervention?
- 2- Are there any relationships between socio-demographic data of the studied adolescents and happiness?

METHODS

Research design: Quasi-Experimental one group pre-test and post-test design.

Setting: Sers Alliyen Aljadida preparatory school, Sers alliyen city, Menoufia Governorate, Egypt.

Selection of the setting technique

A multistage random selection of one educational directorate out of ten educational directorates in ten cities in Menoufia Governorate was done. The researchers wrote the directorates' names in separate papers then placed them in a container and selected one paper through simple random selection. The selected directorate was in Sers Elliyen city. The researchers wrote Saris Elliyen's preparatory schools' names in separate papers then placed them in a container and selected one paper through simple random selection. The researchers randomly selected Saris Elliyen Aljadida preparatory school.

Subjects: A simple random sample

Sample size: Sample size was calculated at power 80%, error margin 5%, and a confidence interval 95%. The calculated sample was 80 students.

Sampling technique

The researchers wrote the Saris Elliyen Aljadida

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preparatory school's second-year classes in separate papers then placed them in a container and selected one paper to select one class through simple random selection. Also, the researchers wrote the numbers of the Saris Elliyan Aljadida preparatory school's third-year classes in separate papers then placed them in a container and selected one paper to select one class through simple random selection. A total of 80 students consented to share in the study. The researchers wrote the students' names in separate papers then placed them in a container and selected one paper to select one student every time to create four groups through simple random selection. Every group contained 20 students.

Tools of Data Collection

Seven instruments were utilized to accomplish the current study's aim:

Tool (1): A constructed interview questionnaire:

This questionnaire was designed by the researchers after the scientific literature review to assess students' socio-demographic characteristics such as age, sex, grade, residence, educational parents, and family economic status.

Tool (2): Brief Symptom Inventory (BSI)

The adolescents' mental health was measured by the Brief Symptom Inventory (BSI) was developed by [42]. It was adopted and translated into Arabic and tested for content validity and reliability by the researchers. It was designed to recognize self-reported clinically related to adolescents and adults' psychological symptoms. The inventory provides distress indices and symptom load assessment on 10 subscales-somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychotic ideation, and miscellaneous. For a single summary measure, Derogatis and Spencer [42] recommend the Global Severity Index (GSI) calculated as the average of ratings assigned to symptoms. The Participants respond to each feeling item on a three-point Likert scale ranging from 0 (not at all) to 2 (frequently). Rankings describe the distress's intensity during the past week. The BSI has yielded good psychometric properties: Cronbach's alpha coefficients of 0.71–0.81, high test-retest reliability (correlations between .78 and .90), and high concurrent validity with the MMPI. In the current study, the Cronbach's alpha coefficients were $\alpha = 0.90$ – 0.95 for the GSI and $\alpha = 0.77$ – 0.90 for the subscales.

Tool (3): General Self-Efficacy Scale (GSE)

The GSE was a 10-item scale and was developed by [45]. It was adopted and translated into Arabic and tested for content validity and reliability by the researchers to measure self-efficacy. Participants respond to each item on a scale from 1 (Not at all true) to 3 (Exactly true). The total score is calculated by finding all items's sum. For the GSE, the total score ranges between 10 and 30, with a higher score indicating more self-efficacy. Internal reliability for GSE = Cronbach's alphas between 0.76 and 0.90.

Tool (4): Life Orientation Test-Revised (Optimism)(LOT-R)

The LOT-R was developed by [46]. It was adopted and translated into Arabic and tested for content validity and reliability by the researchers. It was a 10-item measure designed to optimism versus pessimism. Of the six items, three items measure optimism, three items measure pessimism. Participants rate each item on a four-point Likert scale: (1 = strongly disagree, 2 = disagree, 3 =

agree, and 4 = strongly agree). Total scores of LOT-R are calculated by summing the three positively worded and three negatively worded items (these are reverse coded). Reliability analyses in this study showed the internal consistency for optimism ($\alpha = 0.52$ – 0.58) and pessimism ($\alpha = 0.62$ – 0.68).

Tool (5): Rosenberg Self-Esteem Scale (RSE)

The scale was a self-report measure of self-esteem and originally developed by [47]. It was adopted and translated into Arabic and tested for content validity and reliability by the researchers. It is a ten-item Likert scale with items answered on a four-point scale - from strongly disagree to strongly agree: (0 = strongly disagree, 1 = disagree, 2 = agree, and 3 = strongly agree). Sum scores for all ten items. A higher score indicates more self-esteem. Test-retest reliability for the RSE range from 0.80 to 0.83 and Internal consistency for the RSE range from 0.75 to 0.85.

Tool (6): Satisfaction with Life Scale (SWLS)

The scale was developed by [38]. It was adopted and translated into Arabic and tested for content validity and reliability by the researchers. It was designed to measure global cognitive judgments of one's life satisfaction (not a measure of either positive or negative affect) and consisted of five-items. Participants use a four-point scale that ranges from 1 strongly disagree to 4 strongly agree to indicate how much they agree or disagree with each of the five-items using. Test-retest reliability for the SWLS range from 0.82 to 0.85 and Internal consistency for the SWLS range from 0.77 to 0.88.

Tool (7): The Oxford Happiness Questionnaires (OHQ)

The scale was developed by [44]. It was adopted and translated into Arabic and tested for content validity and reliability by the researchers. The scale was devised as a broad measure of personal happiness. It can be used in the adult population. OHQ is a 29 items measure of happiness that utilizes a three-point rating scale of agreement ranging from 1 (strongly disagree) to 3 (strongly agree). Questioned about subjects' physical health, positive cognition, self-efficacy, self-esteem, life satisfaction, and the happiness. The total score ranges from 29 to 87. In the case of direct items, a chosen response of 1 (strongly disagree) will get a score of 1, and a chosen response of 3 (strongly agree) will get a score of 3. In the case of reverse items, a chosen response of 1 (strongly disagree) will get a score of 3, and a chosen response of 3 (strongly agree) will get a score of 1. The more the score an individual gets in this test, the happier he is. The OHQ demonstrated a high-reliability value of 0.89

Ethical consideration

The Ethical Committee for Scientific Research Review, Faculty of Nursing, Menoufia University, Egypt approved the proposal including the informed consent from the students and their parents after a complete description of the purpose, nature, and confidentiality of the study.

Procedure

Official permission was obtained from the director of Saris Elliyan Aljadida preparatory school. The researchers carried a pilot study conducted to test the questionnaire items' clarity. All students included in the pilot study were excluded from the main study sample. The data was collected from the first of October 2019 to the seven of December 2019. The researchers interviewed the selected students to inform them about

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the study's aim, clarification of scales, and orienting them about the intervention's benefits. Then each student was interviewed individually by the researchers to collect the socio-demographic data and pre-test tools. The researchers started to divide the students into four sub-groups (each group included 20 students).

For six weeks following the introductory meeting, the researcher met with the students for a one-hour session (two groups per day, two days per week). The Positive Psychology intervention (PPI) was composed of six structured one-hour sessions conducted over six weeks. The intervention was guided by research studies intervention by [48; 49; 50; 51; 52; 53; 54]. Based on those interventions, each of the six sessions carried a major theme. In addition to the central exercises drawn from the mentioned interventions, loving-kindness meditation and a savouring exercise practiced in each session. The meditation was introduced to promote and enhance compassion, empathy, social connectedness, and positive affect. Also, the savouring exercise aimed to stimulate positive affect at the moment and to cultivate self-esteem and life satisfaction.

All but the first intervention opened with a summary of the previous week's intervention activities and the homework exercises. After that, the researcher began the session by a brief savouring exercise to facilitate focusing the group's attention on the present moment. Afterward, group discussion focuses on the week's topic. Those discussions were followed by the central exercise. Finally, each session closed with a five-minute loving-kindness meditation.

The Sessions of The positive psychology intervention were:

Session one

Gratitude-“Counting Blessings”. The exercise of Counting Blessings [52] was explained. The researchers told the students to share their levels of gratitude with the group. Also, they were encouraged to share their counted blessings, three things they felt grateful for. Moreover, the researchers asked them to write down how these events, items, relationships, or characteristics, which they felt grateful for, positively affected their lives. As a homework exercise, the researchers told them to repeat the counting blessings exercise daily over the next week. After the first week, the exercise was repeated once a week for the remaining five weeks.

Session two

Kindness-“Acts of Kindness”. The second exercise was Acts of Kindness [55]. In this session, the researchers told students to self-reflect on the role of kindness played in their lives, also, to identify whom they felt benefitted from their voluntary acts of kindness. Also, each student received a card with another group member's name on it and was asked to write, and later share with the group, something kind about that person. Linked to the sharing of the kind words, students were asked to self-reflect on how they felt after receiving words of kindness. After that, an explanation was given regarding the homework exercise of performing five kind acts in a single day during the following week. This exercise was repeated weekly for the duration of the intervention.

Session three

Character Strengths-“You at Your Best”. This session introduced the exercise you at your best [53]. This exercise necessitated that each student thought of a time or an event when they felt that they were at their best.

Once students had recalled a relevant experience, they were asked to write about it and then create a drawing depicting that time when they felt they were at their best. Once they had completed these tasks, to strongly identify with and engage in the experience, they were asked to recollect how they felt and what strengths they employed at the time of their success. Also, the researchers told students to think about the amount of time, effort, and creativity that comprised such as an accomplishment. Thereafter, the researchers asked them to share their stories with the group and to discuss the strengths they utilized to realize their success and also, the impact the achievement had on their emotions and self-esteem. Moreover, group members were encouraged to offer up unidentified strengths or qualities employed in each story. As a homework activity, it was recommended that the students re-read and elaborated on their stories throughout the week that followed.

Session four

Character “Strengths-Strength Spotting and Using Character Strengths in a New Way”. The focal task focused on strength identification and utilization. The researchers used Proctor et al.'s [49] method for “strength spotting”, each of the students received a worksheet listing the 24 character strengths identified in Peterson and Seligman's [51] Values in Action (VIA) classification. The listed character strengths were paired with age-appropriate descriptions. Students took turns reading the character strength descriptions out loud. Following each description, the group engaged in a discussion that served to identify new ways to exercise the specified character strength. Once group members had an understanding of the 24 character strengths, they were asked to go through the list individually and identify and rank their top five character strengths. Thereafter, students received cards on which another group member's name was printed; The researchers told students to identify and later share with the group one or more character strengths of the person whose name card they had received. In turn, within a group conversation, each student compared and reflected on their self-identified and participant-identified character strengths. Also, they considered and discussed whether they had used those character strengths in their “you at your best” stories. Then, the researchers asked them to utilize at least one of their top five character strengths in a new way every day for the week.

Session five

“Hope-Best Possible Future Self”. In this session, the students were introduced to a hope-based exercise that focused on writing about one's life goals and aspirations. In this exercise known as the “best possible future self” [54]. The researchers told students to think about their lives in the future; a future where everything progressed as well as possible, where individuals worked hard and achieved their desires and reached their life goals. Therefore, they were asked to write about their “best possible future self”. On completion of the written exercise, the students were guided through a visualization process; they were asked to use all their senses to create a rich visualization of their “best possible future self”. This process was followed by a creative drawing task of illustrating the image of their visualization and written story. Thereafter, the researchers invited them to share their “best possible future selves” with the group. The homework exercise involved reviewing and enriching their writing,

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visualization, or illustration of their “best possible future self”.

Session six

Hope-“Goal Mapping”. The final session focused on hope-based “goal mapping” [50]. The focal discussion centered on hope-directed goal-setting concerning pathways and agentic thought. Following the group discussion, The researchers told students to select personally relevant short to medium goals they wanted to achieve. Once the goals were selected, the students were asked to complete a worksheet detailing a three-staged pathway required to achieve the desired goal. On the worksheet, they were also required to identify roadblocks that could obstruct each progressive phase of the planned route to accomplishment. Finally, to complete the worksheet, they needed to create alternative pathways around the perceived obstacles. After a group discussion focused on motivational techniques, the researcher told students to identify and list various methods of keeping a sense of agency required to achieve their desired goals. These tasks were followed by a visualization exercise; students were encouraged to use all five senses to imagine traversing the three-staged pathway and negotiating the obstacles whilst remaining motivated. As a final step, the researchers told them to visualize themselves accomplishing their desired goals and to experience the emotions of success.

One week after the conclusion of the six-week intervention sessions, the researcher met the students. During the post-intervention session, the students completed the original measures implemented in the introductory meeting.

Data Analysis

Data were collected, tabulated, statistically analyzed using an IBM personal computer with Statistical Package of Social Science (SPSS) version 19 (SPSS, Inc, Chicago, Illinois, USA).where the following statistics were applied: *Descriptive statistics*: in which quantitative data were presented as the mean (\bar{X}), standard deviation (SD), range, and qualitative data were presented as numbers and percentages.

Analytical statistics: used to find out the possible association between studied factors and the targeted disease. The used tests of significance included:

Student t-test: is a test of significance used for comparison between two groups having quantitative variables

ANOVA (f) test: is a test of significance used for comparison between three or more groups having quantitative variables

Paired t-test: is a test of significance used for comparison between two related groups having quantitative variables

Pearson correlation (r): is a test used to measure the association between two quantitative variables.

A p-value of >0.05 was considered statistically non-significant.

A p-value of <0.05 was considered statistically significant.

A p-value of <0.001 was considered statistically highly significant.

RESULTS

Sample Characteristics:

Table (1): Revealed that a total of 80 studied adolescents completed the positive psychology

enhancing strategies intervention sessions, with a mean age of 13.7years ± 0.68 years and a range of 13 – 15 years. Of those 80 participants, 40% were second preparatory (n=32) and 60% were third preparatory (n=48), 53.8 % from rural residence (n=43) and 46.3 % from rural residence (n=37) , 93.8 % live with both parents(n=75) , 41.3% have average economic status (n= 33) , 38.8% of adolescents' fathers have average educational level (n=31), 50.0% of adolescents' fathers are entrepreneur (n=31), 41.3% of adolescents' mothers have below average educational level (n=33), 66.3% of preparatory school students' mothers are housewives (n=53).

Table (2): Supported **hypothesis 1**, which proposed that adolescents who will participate in positive psychology intervention will have lower levels of psychological distress symptoms post-intervention than before. Based on a sum score on the Brief Symptom Inventory (BSI) before and after positive psychology intervention, there was a significant reduction in psychological distress symptoms after positive psychology intervention ($M = 26.5$, $SD = 6.09$) than before ($M = 64.2$, $SD = 8.59$). Also supported **hypothesis 2**, adolescents who will participate in positive psychology intervention will have a higher score in self-efficacy, self-esteem, optimism, life satisfaction after positive psychology intervention than their scores before it. Based on the score on General Self-Efficacy Scale, Rosenberg Self-Esteem Scale and the Satisfaction with Life Scale before and after positive psychology intervention, there was a highly statistically significant improvement in self-efficacy, optimism, self-esteem and life satisfaction after positive psychology intervention ($M = 24.8$, $SD = 2.20$) than before ($M = 17.0$, $SD = 2.38$), ($M = 20.3$, $SD = 1.39$) than before ($M = 14.0$, $SD = 2.76$) , ($M = 23.9$, $SD = 2.29$) than before ($M = 15.8$, $SD = 3.75$) and ($M = 16.6$, $SD = 1.35$) than before ($M = 11.4$, $SD = 2.05$). Also supported **hypothesis 3**, adolescents who will participate in positive psychology intervention will have a higher score in happiness level post-intervention than before. Based on a sum score on the Oxford Happiness Questionnaires, there was a highly statistically significant improvement in happiness level after positive psychology intervention ($M = 69.5$, $SD = 6.36$) than before ($M = 51.5$, $SD = 7.67$).

Table (3): Based on the correlation between adolescents' psychological distress symptoms, self-efficacy, optimism, self-esteem and satisfaction with life and happiness after positive psychology intervention, there was a significant negative correlation between psychological distress symptoms and happiness among the studied adolescents after the positive psychology intervention ($r = -0.469$, $p\text{-value} < 0.001$). This means that when the brief psychological distress symptoms decreased, happiness increased. Also this table revealed that there was a significant positive correlation between self efficacy, optimism, self esteem , satisfaction with life and happiness among the studied adolescents after the positive psychology intervention ($r = 0.354$, $p\text{-value} < 0.001$), ($r = 0.396$, $p\text{-value} < 0.001$), ($r = 0.560$, $p\text{-value} < 0.001$), ($r = 0.410$, $p\text{-value} < 0.002$). This means that when self-efficacy, optimism, self-esteem, satisfaction with life increased, happiness level increased.

Table (4): Showed that there was a significant difference in percent improvement of happiness scale score regarding residence, economic status, mothers' educational level and father's educational level, fathers' occupation and mothers' occupation: the highest

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improvement was found among adolescents who live in a rural area and have very good economic status. There was a significant difference in percent improvement of happiness scale score regarding the mother's educational level and father's educational level: the highest improvement was found among adolescents whose mothers and fathers have a below-average educational level. There was a significant difference in percent improvement of happiness scale score regarding fathers' occupation and mothers' occupation: the highest improvement was found among adolescents whose mothers are housewives and their fathers are workers.

Table 1. Socio-demographic data of the studied group

Variables	Studied group n = 80	
	M	SD
Child age/years (Mean±SD) Min - Max	13.7±0.68	13 - 15
Academic year Second preparatory Third preparatory	32(40.0) 48(60.0)	
Residence Rural Urban	43(53.8) 37(46.3)	
Fathers' educational level Illiterate Below average Average University	6(7.50) 30(37.5) 31(38.8) 13(16.3)	
Fathers' occupation Don't work Worker Employee Entrepreneur Others	6(7.50) 11(13.8) 20(25.0) 40(50.0) 3(3.80)	
Mothers' educational level Illiterate Below average Average University	5(6.30) 33(41.3) 25(31.3) 17(21.3)	
Mothers' occupation Housewife Worker Employee	53(66.3) 5(6.30) 22(27.5)	
Social status of the family Live with both parents Live with one parent	75(93.8) 5(6.30)	
Economic status Very good Good Average	28(35.0) 19(23.8) 33(41.3)	

Data are presented as n (%)

Table 2. Total Adolescents' Psychological Distress Symptoms, Self-efficacy, Self-esteem, Optimism, Satisfaction with Life and total happiness Pre and Post Positive Psychology Intervention

Variables	Studied group n = 80	
	M	SD
Pre Total Psychological Distress Symptoms	64.2	8.59
Post Total Psychological Distress Symptoms	26.5	6.09
Paired sample t -test	69.2	0.001**

P-value			
Pre Total Self efficacy	17.0	2.38	
Post Total Self-efficacy	24.8	2.20	
Paired sample t -test P-value	28.6		0.001**
Pre Total Optimism	14.0	2.76	
Post Total Optimism	20.3	1.39	
Paired sample t -test P-value	28.8		0.001**
Pre Total Self esteem	15.8	3.75	
Post Total Self-esteem	23.9	2.29	
Paired sample t -test P-value	27.5		0.001**
Pre Total Satisfaction with Life Scale	11.4	2.05	
Post Total Satisfaction with Life Scale	16.6	1.35	
Paired sample t -test P-value	30.9		0.001**
Pre Total happiness	51.5	7.67	
Post Total happiness	69.5	6.36	
Paired sample t -test P-value	39.4		0.001**

M (mean) SD(standard deviation) **Highly significant

Table 3. Correlation between Adolescents' Psychological Distress Symptoms, Self-efficacy, Self-esteem, Optimism, Satisfaction with Life and Happiness after Positive Psychology Intervention

Variables	Happiness	
	r	P-value
Psychological Distress Symptoms	-0.469	0.001**
Self efficacy	0.354	0.001**
Optimism	0.396	0.001**
Self esteem	0.560	0.001**
Satisfaction with Life	0.410	0.002**

r= Pearson correlation **highly significant

Table 4. Relationship between Socio-demographic Data of The Studied Group and Happiness after Positive Psychology Intervention

Variables	Happiness		P-value
	M	SD	
Academic year Second preparatory Third preparatory	69.5 69.6	6.08 6.61	0.966
Residence Rural Urban	67.4 71.9	6.64 5.10	0.001**
Fathers' educational level Illiterate Below average Average University	66.5 65.2 72.1 73.2	3.83 5.41 4.01 5.72	0.001**
Fathers' occupation Don't work Worker Employee Entrepreneur Others	65.0 64.4 72.3 70.2 70.0	5.47 4.98 4.61 6.82 0.01	0.004**
Mothers' educational level Illiterate Below average	66.1 70.0	5.44 0.01	0.001**

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Average University	71.4	6.92	
	73.4	4.71	
Mothers' occupation			
Housewife	68.2	6.57	0.021*
Worker	69.2	1.09	
Employee	72.7	5.52	
Social status of the family			
Live with both parents	69.8	6.38	0.201
Live with one parent	66.0	5.47	
Economic status			
Very good	73.0	5.24	0.001**
Good	71.1	6.33	
Average	65.7	5.17	

P Values calculated using t-test and ANOVA test *M* (mean) *SD* (standard deviation) *significant **highly significant

DISCUSSION

The findings revealed that a positive psychology intervention affected promoting mental health, life satisfaction, and happiness level among adolescents. The current study's first hypothesis suggested that adolescents will have lower levels of psychological distress symptoms post positive psychology intervention than before. Support for this hypothesis was found given that there was a significant decrease in total brief symptoms inventory which measures psychological distress symptoms which indicates prevention of depression and promoting of mental health post-intervention than pre-intervention (Table 2). This could be attributable to the important role of positive psychology intervention in the prevention of depression and the promotion of mental health. The present study's finding was consistent with the study findings indicated participants in the positive psychology and creative journal arts intervention group had a significant lower scores on depressive symptoms from pre-intervention to post-intervention [56]. In the same line with [57], who reported participants in a positive psychology school-based intervention exhibited significant decreases in psychological distress from the beginning to the study end. Also, [58], their findings support the effect of the gratitude and strengths-based interventions decreasing depressive symptoms. Additionally, the current study finding was consistent with Khan et al's study findings [59]; the researchers revealed Nigerian college students who acquiring adequate positive psychology skills would positively contribute to high examination scores, relieve the level of anxiety, and improve the students' psychological well-being.

The current study's second hypothesis suggested that adolescents' self-efficacy, self-esteem, optimism, and life satisfaction will improved post positive psychology intervention than before. Support for this hypothesis was found given that the current study's findings proved there were significantly greater increases in self-efficacy, self-esteem, optimism, and life satisfaction scores from pre-intervention to post-intervention (Table 2). This is due to the positive psychology intervention's effect on improving self-efficacy, self-esteem, optimism, and life satisfaction.

Related to optimism; this result was in harmony with the results were obtained by [60], they illustrated there were significantly greater increases in self-efficacy and optimism from pre-test to post-test. In the same line with Huffman et al [61] conducted a study to assess the positive psychology exercise's effect on patients

hospitalized for suicidal thoughts or behaviors; the researchers reported half of patients had an improvement in optimism and hopelessness. Also, the current study's finding was consistent with Uliaszek et al's studies [62] who reported that positive psychotherapy causes optimism. This due to that positive psychology intervention has many ideas and principles such as acceptance and interest in one's body, paying attention to one's positive points, and ignore negative points play a significant role in decreasing psychological distress, improving subjective well-being, and increasing optimism and happiness. Moreover, Vera-Villarroel & Valtiera [63] reported optimism as one of the positive psychological resources' components that play a role in generalizing and stabilizing individuals' expectations for positive outcomes. Several research studies have indicated that differences in optimism level determine how an individual feels, and how he approaches certain challenging activities or problematic situations. Under such conditions, persons who have optimistic thoughts can expect a positive consequence, and these expectations are related to positive psychology strength. While, persons who have pessimistic thoughts would anticipate a negative result, due to a lack of positive psychology strengths [64].

Related to self-efficacy and self-esteem, the current study finding was consistent with [60]; who illustrated Greece students who participated in the positive psychology intervention displayed a higher increase in self-efficacy at time 2 than time 1(63.31(8.70); 59.83(10.16)) respectively. Also, this result was supported by [65]; they found that positive psychiatric intervention had a significant role in increasing the psychological well-being and self-esteem's mean scores in post-test and follow-up stages among Iranian depressed adolescents significantly. Moreover, this result was in harmony with [66]; the researchers documented intervention group students reporting significant increases from time one to time four in self-esteem and self-efficacy. Additionally, the researchers reported that persons with self-efficacy especially having a positive self-image, hardiness, and self-efficacy. They surpass at strategizing these positive features in an active way such as higher life satisfaction, better psychological adjustment, and lower psychological distress [67].

Related to life satisfaction, the current study's finding was consistent with [68], they documented that after application of a 5-week hope-based intervention on middle school students, the intervention group had self-worth, enhanced hope, and life satisfaction post-intervention. In the same line, [69], their study findings proved that at post-intervention, students who shared in positive psychology intervention proved significant gains in all subjective well-being's indicators (life satisfaction, positive affect, and reduction in negative affect). Also, the study's researchers concluded that the study results provide support for this intervention as an evidence-based school-based intervention that leads to long-lasting improvements in early adolescents' positive affect, a subjective well-being primary indicator. Moreover, a great number of positive psychology interventions implemented with youth have been shown to successfully increase aspects of subjective well-being, including decreased negative affect, increased positive affect, and increased life satisfaction [70; 71].

The current study third hypothesis suggested that

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adolescents' happiness level will be increased post positive psychology intervention than before. Support for this hypothesis was found given that the current study's finding illustrated there were significantly greater increases in happiness level from pre-intervention to post-intervention (Table 2). It can be due to the positive psychology intervention's effect on improving adolescents' self-efficacy, self-esteem, optimism, and life satisfaction and this improvement will lead to an increase in happiness level. This finding was consistent with [72]; they indicated that happiness is increased through positive thoughts which are experienced through gratitude and optimism interventions. Also, in the same line with Shoshani et al's study findings [66]. The study's researchers informed positive psychotherapy by increasing coping strength can improve psychological well-being and happiness. Moreover, the current study's finding was supported by [73]. The researchers showed an increased in the intervention group's happiness level among German-speaking adults at post-test. Besides, the current study finding was in harmony with many studies such as [74; 58; 33] have investigated the positive psychotherapy's effectiveness in reducing symptoms of depression and increasing happiness and psychological well-being have reported the positive effect of this method

The findings based on research question number one demonstrated that adolescents' psychological distress symptoms had a highly significant correlation with happiness and the relationship was negative. The highly significant negative correlation indicated that the higher level of adolescent students' psychological distress symptoms, the lower level of happiness. The same findings have been reported by [75] who investigated the impact and correlation of happiness and life satisfaction with depressive symptoms among Korean university students; the researchers indicated happiness and life satisfaction were related to a lower risk of depression. Also, the current study finding was inconsistent with [76]; who showed that there was a significant negative correlation between psychological distress and happiness and life satisfaction. Moreover, the research was carried by [77] to examine Humboldt Happiness Scale adolescent version's psychometric properties on American high school adolescents. The researcher reported depression and happiness were negatively correlated. Additionally, the current study finding was in the same line with [78]; who proved there was a significant negative correlation between depression and happiness. The research question also sought to examine the correlations between adolescents' self-efficacy, self-esteem, optimism, and life satisfaction and happiness. It was found to be positive and highly significant. The highly significant positive correlations indicated that the higher levels of adolescents' self-efficacy, self-esteem, optimism, and life satisfaction, the higher level of happiness.

Related to the correlation between adolescents' self-efficacy, self-esteem, and happiness. parents' educational level and occupation [19]; who indicated happiness has a positive and significant relationship to emotional self-efficacy, psychological well-being, self-esteem and affect balance among Turkish university students. In the same line with [77]; who reported Humboldt Happiness Scale and the Oxford Happiness Questionnaire were used to measure happiness both positively related to self-esteem. Also, the researcher confirmed persons with high levels

of self-esteem report high levels of happiness.

Related to the correlation between adolescents' optimism and happiness. The current study finding was in the same line with [79]; who reported that happiness has a high-level positive relation with optimism. Also, Low [77] reported Humboldt Happiness Scale and the Oxford Happiness Questionnaire were used to measure happiness both positively related to optimism. Moreover, Sahin [80] found that a medium level positive correlation between optimism and happiness among university students.

Related to the correlation between adolescents' life satisfaction and happiness. The current study finding was supported by Koc & PEPE [79]; they reported happiness has a high-level positive relation with life satisfaction. Also, in the same line with [76]; who proved that there was a significant positive correlation between happiness and life satisfaction. Moreover, Demir [81] found that there were significant relationships between happiness, life satisfaction, and optimism.

The findings based on research question number two demonstrated that there are highly significant relationships between some adolescents' socio-demographic data such as parents' educational level and occupation, economic status, residence, and happiness. Related to the relationship between parents' educational level, occupation, and happiness. The current study finding was in the same line with [82]; who indicated girls whose fathers had a university degree or those mothers had a high school level had a high scores of happiness. The researchers also reported that students' happiness has a significant association with their parents' job: highest for those with a father working as a teacher or mothers working as a clerk. Also, Guomundsdottir [83] found there was a significant positive correlation between both mothers' and fathers' education with happiness. Moreover, Chen [84] proved that educational level is related to happiness. Persons with a high education level had more extensive social connections as well as greater involvement with the wider world than less educated persons; these life circumstances are positively related to happiness. Additionally, the current study finding was supported by Guomundsdottir et al [85]; who illustrated there was a significant increase in happiness among those who had parents with higher education.

Related to the relationship between economic status and happiness. The current study finding was consistent with [86]; who examined the relationship between sociodemographic factors and everyday events and adolescent's happiness in Malaysia. The researchers reported there were significant associations between household income and income of father and happiness. Also, Gray et al [87]; reported adolescents with the highest economic status were happiest. Moreover, many researchers proved a positive relationship between income and happiness, as in most countries, persons with a high levels of income are happier than persons with low income [88; 89; 90].

Related to the relationship between residence and happiness. The current study finding was in the same line with [91]; who found people living in larger communities to be happier. Also, previous research proved that individuals who live in places outside the city, suburbs, or rural, are slightly happier and satisfied with their place of residence [92; 93].

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CONCLUSIONS

According to the this study's results, indicating a significant positive psychology intervention effect on mental health, it can be concluded the importance of application of positive psychology intervention for promoting mental health, increase life satisfaction and happiness level among adolescents. So, the school nurse

RECOMMENDATION

Based on the study's findings, it was recommended the school nurse regularly assess all adolescents to identify those with low happiness and life satisfaction levels. Also, the school nurse applies positive psychology intervention to prevent depression, and promote mental health, increase life satisfaction and happiness levels among adolescents in the school setting.

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