

# The Effect Size of Forgiveness in Hope and Life Satisfaction Among Adolescents Living with Imperfect Family Structure: Taking Anxiety Levels and Sex into Consideration

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## ABSTRACT

This study aimed to describe the differences in correlation of forgiveness and hope as well as life satisfaction according to anxiety levels and sex among adolescents living with the imperfect family structure. A total of 171 Indonesian teenagers involved were students of a state vocational school in Semarang obtained through stratified cluster random sampling (age range was 14 to 18,  $M_{Age}=16.01$ ,  $SD_{Age}=0.911$ , Male=62,57%). The measurements used Forgiveness Scale ( $\alpha=0.867$ ), SHS ( $\alpha=0.701$ ), SWLS ( $\alpha=0.733$ ), and DASS-Anxiety ( $\alpha=0.662$ ). The result of Mann-Whitney U and Kruskal Wallis analysis showed that the three positive psychological constructs were significantly distinguished by anxiety levels and sex. Male teenagers tended to be more forgiving, had higher hope and life satisfaction than female teenagers. In addition, these variables decreased along with anxiety. The Spearman's rho correlation test between variables according to sex showed that forgiveness contributed to hope and life satisfaction more in females. Forgiveness had the highest and significant contribution to hope and life satisfaction in those with severe to profound anxiety levels; in which hope showed the correlation coefficient increased with anxiety. In contrast to male teenagers where forgiveness contributed significantly to hope only among those who had moderate anxiety levels, forgiveness in female teenagers had the lowest contribution to hope in those with moderate anxiety levels while the highest in those with severe to profound anxiety levels. In male teenagers, forgiveness contributed significantly to life satisfaction only among those with severe to profound anxiety levels; whereas in female teenagers, the contribution was also significant among those who had moderate anxiety levels. In contrast to male teenagers whose contribution of hope to life satisfaction increased along with anxiety, females showed a decrease.

**Keywords:** *adolescent, student, imperfect family structure.*

## 1. INTRODUCTION

Adolescence is an important stage of development due to the rapid enhancement in various aspects. During this period, rapid physical, psychological, and social growth take place. Physically, development during adolescence is characterized by significant somatic growth and also maturation of secondary sexual characteristics [1][2]. These physical changes affected their self-esteem and their body image which created a new personality and new identity [3]. Adolescence is also characterized by the increase in cognitive development maturity [4] and the presence

of adolescent egocentrism in their cognitive developmental process namely imaginary audience, personal fable, pseudo-stupidity, and apparent hypocrisy [5]. Passing this period in a healthy way will positively affect the perspectives on life [3].

Adolescence is a transitional period where individuals must deal with situations that require them to behave like adults without having previous experience as adults [6]. Failure to adapt to the changes or lack of meeting the needs may cause emergence of adolescence health behaviours [3] [7], even psychiatric problems [8]. Research suggests that family structure is also related to adolescent physical health, behaviour,

and emotional well-being. Most family types showed that adolescents tend to have poorer outcomes when compared to two-biological-parent families [9]. Being in a family with certain characteristics can be a stressful experience. Perceived family distress in adolescents has been proven to be associated with stress, anxiety, and even depression [10]. Among family characteristics, differences in family structure that impact with whom teenagers live (housemate) have been proven to contribute to positive psychological attributes that could potentially influence adjustment. Previous research has shown that incomplete family structures that require adolescents to live with other relatives or other people, or even live alone have the lowest level of forgiveness, hope, and life satisfaction; on the other hand, those who live with both parents have the highest level. Meanwhile, those who live with one parent have a level in between [11].

The results of the study on the adolescent population indicated a tendency for the importance of positive psychological constructs in their lives. Positive psychological constructs show a significant correlation with academic achievement and mental health [12], reduce negative behavior and increase positive behavior [13] [14]. It has been explained that among a number of positive psychological constructs that have been studied in the general population of teenagers are forgiveness, hope, and life satisfaction. The results show a significant positive correlation between the three [15]. Here, forgiveness is considered a predisposing factor for hope and life satisfaction.

Forgiveness was defined as “a dialectical process through which people synthesize their prior assumptions and the reality of the transgression into a new understanding of the transgression, transgressors, transgression sequences, and, potentially, of themselves, other people, or the world” [16]. In this study, forgiveness was linked to hope and life satisfaction. On the one hand, hope is described as a perceived ability to derive pathways to plan to meet goals and to have determination through a cognitive set to make use of the pathways in reaching the goals. Pathways is the perceived ability to create routes to one's goals; while agency is the individual's perceived capacity for the initiation and maintenance of the actions necessary to meet the goals [17]. On the other hand, a person's global judgment of life satisfaction is theoretically dependent on how an individual compares his/her life circumstances to his/her standards [18].

However, research on positive psychological buffers is not that simple among adolescents, considering the characteristics of this developmental period, as well as non-normative life experiences. In this case, forgiveness is an abstract construct to be realized in adolescence and

develops with age [19], [20], where adversity experiences are considered to have influenced the development of forgiveness [21]. Furthermore, hope for adolescents is positively associated with self-esteem and optimism [22] and as a psychological strength, predicting depression and life satisfaction, and promoting emotional well-being [23]. However, hope in adolescents may be predicted by bias-optimism so that idealism is more likely to be put forward than the urge in achieving it [24]. Finally, life satisfaction, which may vary in adolescents with non-normative life experiences, is actually an important construct for adolescents because it is closely associated with happiness as well as a range of positive personal, behavioral, psychological, and social outcomes [25].

Among the characteristics, the researchers in this study considered anxiety levels and sex as important in terms of their role in the positive psychological constructs examined here. The unique characteristic of anxiety that is often forgotten to be considered in correlational research is its catastrophe model of anxiety and performance. This model suggests that cognitive anxiety and physiological arousal influence performance in an interactive fashion, whereby cognitive anxiety determines the degree of the effect of physiological arousal on performance which can be small and smooth, large and catastrophic, or between the two extremes [26]. To put it simply, this model proposes that the somatic effect of anxiety is related to performance in an inverted-U fashion, but only in those who are low in cognitive state anxiety [27]. Furthermore, sex also has been considered in distinguishing the psychological and social characteristics of adolescents [28][29] to psychiatric symptoms [30]. Here, sex also distinguishes forgiveness, hope and life satisfaction [11], where male teenagers have a higher and significant level than female teenagers - however, it is not significant for the forgiveness dimension of others.

Based on the background above, this study aimed to describe the differences in the correlation between forgiveness and hope as well as life satisfaction according to anxiety levels and sex among adolescents who live with the imperfect family structure. This study also examined the differences of those positive psychological constructs according to sex and anxiety levels.

## **2. METHOD**

This study was designed as a cross-sectional quantitative study which required the collection of research data at one time without considering the causal effects between variables.

## **2.1. Population and Sampling**

This study involved Indonesian adolescents who were students of a state vocational high school in Semarang. The vocational high school was chosen because the results of our preliminary study at this school through interviews with guidance and counselling teachers explained the various family-based problems experienced by students. The incomplete family structure was also a concern. The participants were 171 out of 909 teenagers (age range was 14 to 18,  $M_{Age}=16.01$ ,  $SD_{Age}=0.911$ , Male=62,57%) who were obtained through the stratified cluster random sampling technique and representing each grade level which was then screened to meet the criteria, i.e. living with imperfect family structure, either living with only one parent, or living with other relatives or even other people. Participants representing class X consisted of first-year students totaling 40.4%; class XI consisted of second-year students totaling 35.1%; class XII consisted of third-year students totaling 24.6%. The ethical standards were met by asking for participants' approval to engage in data collection activities, by signing the informed consent voluntarily.

## **2.2. Measurements**

Participants' demographic data identified in the booklet were presented together with measurement scales, consisting of school grade, age, sex, and housemate. Anxiety in this study was measured with the Depression Anxiety Stress Scale (DASS-21) which was originally developed by Lovibond and Lovibond and later adapted into Indonesian by Damanik [31]. Physiological hyperarousal (DASS-Anxiety) is one of the three dimensions specified in the tripartite model. Cronbach  $\alpha$  examination result for DASS-Anxiety was .662. The result was grouped into 5-level categories of anxiety, i.e. 'normal', 'mild', 'moderate', 'severe', and 'profound'. The forgiveness scale used in this study was a 40-item Likert scale ( $\alpha=.867$ ) compiled by researchers based on Thompson et al. [16], divided into 16 favorable items and 24 unfavorable items, scored in reversed (ranged from 0 to 3). The scale is divided into 3 subscales: self-forgiveness, forgiveness of others, and forgiveness of situations. Hope was measured using The State Hope Scale [17], that is a 6-item scale which has been adapted into the Indonesian and tested in this study population ( $\alpha=.701$ ). This scale is divided into two subscales, i.e. agency (goal-directed determination) and pathways (planning to meet goals). The agency subscale is represented by the even-numbered items, and the pathways subscale is represented by the odd-numbered items. Life satisfaction was measured using The Satisfaction with Life Scale (SWLS) [18], a 5-item scale

that has been adapted into Indonesian language and tested in this study population ( $\alpha=.733$ ).

## **2.3. Data Analysis**

Data analyzes were performed using descriptive and inferential statistics. The descriptive statistics were used to describe the mean, standard deviation, and categorization for each variable. The inferential statistics used were non-parametric by considering the normal distribution of the data, i.e. for two objectives, the first was to see the significance of the differences in variable scores. The examination for this first objective was carried out using the Mann-Whitney U and Kruskal Wallis Test. The second, Spearman's Rho correlation test was used to answer the main objective of this study, which was to see the effect size and significance of the correlation between forgiveness and hope as well as life satisfaction. In addition, the correlation between hope and life satisfaction was also observed. All data analyzes considered demographic data (including sex which was the focus of attention in this study), anxiety levels, or sex and anxiety levels together, in addition to paying attention in detail to the forgiveness dimensions and hope subscales.

## **3. RESULT**

### **3.1. Demographic characteristics of participants and descriptive statistics of the variables**

A total of 171 Indonesian teenagers who met the criteria and were students of a state vocational high school in Semarang were involved in this study. Age range was 14 to 18 ( $M_{Age}=16.01$ ,  $SD_{Age}=0.911$ ), 62.57% of them were male. There was a two-housemate classification, i.e. teenagers who live with one parent (72.5%) and those who live with other relatives or other people (27.5%). There were 77 students in the category of normal to mild anxiety levels, 55 in the moderate anxiety levels, and 39 in the severe to profound anxiety levels.

The results of Mann-Whitney U and Kruskal Wallis analysis showed that the three positive psychological constructs, namely forgiveness, hope, and life satisfaction, were significantly distinguished by sex and anxiety levels. In relation to sex, male teenagers tended to be more forgiving, higher in hope and life satisfaction than female teenagers. However, specifically, there were no significant differences in the 'others' dimension of forgiveness and agency subscale of hope. Meanwhile, according to anxiety levels, all three positive psychological constructs, both general and considering the dimensions/subscales, were significantly different,

specifically there were decreases in the scores along with the increase in anxiety. In relation to housemates, the only significant differences were in forgiveness, in general and based on the 'others' as well as 'situations' dimensions of forgiveness, which had a higher value on those who live with one parent than living with non-parents.

When the hypothetical norm was used as a reference in 5-group categorization, that was very low ( $x < \mu - 1.5\sigma$ ), low ( $x < \mu - .5\sigma$ ), medium ( $\mu - .5\sigma \leq x < \mu + .5\sigma$ ), high ( $\mu + .5\sigma \leq x$ ), and very high ( $\mu + 1.5\sigma \leq x$ ), the majority of samples had forgiveness at a high level ( $n=76$ , 44.4%), while the rest was at a medium level ( $n=64$ , 37.4%), low level ( $n=16$ , 9.4%), very high level ( $n=10$ , 5.8%) and very low level ( $n=5$ , 2.9%); hope at a very high level ( $n=66$ , 38.6%), while the rest was at a high level ( $n=65$ , 38.0%), medium level ( $n=31$ , 18.1%), low level ( $n=5$ , 2.9%) and very low level ( $n=4$ , 2.3%); and life satisfaction at a medium level ( $n=67$ , 39.2%), and the rest was at a high level ( $n=47$ , 27.5%), low level ( $n=25$ , 14.6%), very high level ( $n=17$ , 9.9%) and very low level ( $n=15$ , 8.8%).

### ***3.2. The differences of each variable score according to demographic characteristics identified, anxiety levels, sex, and both anxiety levels and sex***

The results also indicated that forgiveness in both males and females, compared to hope and life satisfaction, was more likely to be significantly different between anxiety levels, that was, the level of forgiveness decreased as the anxiety levels increased. Taking into account the dimensions, both forgiveness of self and situations for male and females tended to show significant differences along with anxiety, namely a decrease in scores. A salient difference according to sex was that males were more likely to not forgive others along with increased anxiety, which was not the case for females (there was no difference in the forgiveness of others between levels of anxiety in female).

For males, the difference between hope and life satisfaction was significant when compared with 'normal to mild' anxiety levels with 'severe to profound' anxiety levels, where hope and life satisfaction are lower for those with 'severe to profound' anxiety levels. Meanwhile, for females, there was no significant difference in hope between anxiety levels, but the value of life satisfaction began to decline significantly from 'moderate' anxiety level to 'severe to profound' anxiety levels. Finally, in relation to the hope subscales, the differences were significant when those with 'normal to mild' anxiety levels were compared with those with 'severe to profound' anxiety levels. In males, it was the pathways subscale which was significant; while in

females, it was the agency subscale. The scores for those with 'severe to profound' anxiety levels were lower than those with 'normal to mild' anxiety levels.

### ***3.3. Correlations among variables according to anxiety levels, sex, and both anxiety levels and sex***

The Spearman's rho correlation test between variables according to sex showed that forgiveness contributed to hope and life satisfaction more in females. Specifically, compared to male who tended not to have a significant correlation, females' forgiveness of self and situations had a significant correlation with hope and its subscales, and life satisfaction.

Forgiveness had the highest and significant contribution to hope and life satisfaction in those with 'severe to profound' anxiety levels; especially with hope and its subscales, the correlation coefficient increased with anxiety, while with life satisfaction, the correlation was not significant only at the 'moderate' level of anxiety. Self-forgiveness contributed significantly to hope and its subscales only at the 'severe to profound' anxiety levels; while to life satisfaction, there was no significant contribution. Forgiveness of others contributed to hope and its subscales the most at 'moderate' anxiety level (the lowest was at 'severe to profound' anxiety levels); on the contrary, it contributed to life satisfaction, the lowest at the 'moderate' anxiety level (the highest was at the 'severe to profound' anxiety levels). Meanwhile, the significance of the contribution of forgiveness of situations to hope and its subscales and life satisfaction increased so that it was the highest and the most significant at the 'severe to profound' anxiety levels.

In contrast to male teenagers where forgiveness contributed significantly to hope (and its subscales) only among those who had 'moderate' anxiety levels, forgiveness in female teenagers had the lowest contribution to hope (and its subscales) in those with 'moderate' anxiety levels, while the highest was in those with 'severe to profound' anxiety levels (in the agency subscale, these correlations were not significant). In male teenagers, forgiveness contributed significantly to life satisfaction only among those with 'severe to profound' anxiety levels (the lowest and not significant was in those with 'moderate' anxiety level); whereas in female teenagers, not only contributed significantly to the 'severe profound' anxiety level, the contribution was also significant and the most among those who had 'moderate' anxiety levels.

Among male teenagers, each of forgiveness of self, others, and situations did not contribute significantly to almost all variables (hope and its agency subscales, and

life satisfaction) at all levels of anxiety, except the correlation between forgiveness of others and hope, and its agency subscale in those with 'moderate' anxiety level, as well as the correlation between forgiveness of situations and life satisfaction in those with 'severe to profound' anxiety levels.

Among female teenagers, self-forgiveness only contributed significantly to the pathways subscale of hope, namely among those with 'moderate' level anxiety. The forgiveness of others only contributed significantly to the hope and its pathways subscale, namely among those with 'normal to mild' anxiety levels. Meanwhile forgiveness of situations contributed significantly to hope at all levels of anxiety, to agency subscale of hope at 'severe to profound' anxiety levels, to pathways subscale of hope except at 'moderate' anxiety levels, and to life satisfaction only at 'moderate' anxiety levels. In contrast to male teenagers whose contribution of hope to life satisfaction increased along with anxiety, it decreased in females until it was not significantly related among those with 'severe to profound' anxiety levels.

Regardless of sex, forgiveness in general, of self, and of situations have contributed to hope and its subscales increase with anxiety. However this does not apply to forgiveness of others which has contributed the highest to those with moderate anxiety level. In terms of contributions to life satisfaction, forgiveness in general and its dimensions are consistently the lowest at a moderate level anxiety. Furthermore, when related to sex, there is an inverse pattern between males and females in terms of the contribution of forgiveness to hope and its subscales where males with moderate anxiety level get the highest contribution, while females with moderate anxiety level get the lowest contribution. Contribution to life satisfaction shows the opposite result in which males with moderate anxiety level get the lowest contribution, while females with moderate anxiety level get the highest contribution. Specifically related to forgiveness dimensions, there are similar trends, though not always. Sex and the nature of anxiety predict the effect size of forgiveness on hope and life satisfaction as well as how the particularities of the variables in this study work in adolescents. How sex differentiates positive psychological constructs and the correlation among them in this study, that females get a greater benefit despite the fact that males have significantly greater scores, are in line with previous studies in the general adolescent population [11][15].

Apart from considering the differences in sex above, the dynamics of the correlations between the variables may be explained by several reasons. A detail explanation of how anxiety levels affect, as well as how anxiety levels affect performance, needs to be

undertaken. Although it still requires further complex examination, it is particularly somehow related to Hardy & Fazy catastrophe model of anxiety and performance [26][32] as described in the introduction.

An inverted U-shaped relationship between arousal and performance itself is a model that was previously proposed by Yerkes and Dodson [33]. According to this second model, optimal performance shall be given when arousal is at a moderate level, but when arousal is too low or too high, performance will be worse. Although those models have generally been used in sports-related studies until now [34] – e-sports are no exception [35] –, they are also used to explain non-sports-related performance such as healthy behavior [36].

Without considering cognitive anxiety which requires further examination in this study, the inverted U-shaped relationship between arousal/anxiety and performance above seems to support current study. The dynamic of correlation makes the contribution of forgiveness to form the opposite pattern that is the U-shaped relationship. Specifically, it explains why significant correlations, or vice versa, the lowest effect sizes to become insignificant correlations tend to work only at some moderate anxiety levels – where in the correlation between forgiveness and hope, this shape trend is only shown when differentiating according to sex which also adds to the complexity of the contribution of sex. Among male teenagers, the U-shaped relationship applies between the effect size and/or significance of life-satisfaction as the level of anxiety increases, conversely the inverted U-shaped relationship applies between the effect size and/or significance of hope as the level of anxiety increases. In contrast among female teenagers, the U-shaped relationship applies between the effect size and/or significance of hope as the level of anxiety increases, conversely the inverted U-shaped relationship applies between the effect size and/or significance of life-satisfaction as the level of anxiety increases.

Compared to female teenagers, the increased anxiety in male teenagers to an optimal level results in forgiveness contributes more to hope. Among males, hope is associated with performance or behavior aimed to be presented (external-directed). Hope in male teenagers in this study is significantly higher than girls; whereas hope is recorded to have been linked with optimism [37]. Among teenagers, optimism is then associated with performance, generally academic performance, including cognitive belief or self-efficacy [38], engagement [39], and achievement [40]. On the other hand, the behaviors of male teenagers seem to be related to the importance of increasing social status which is then associated with narcissism [41]. Narcissism in male teenagers is more related to social

dominance and increases control over others [42]. As another form of support, behavioral motivation in female teenagers is greater associated significantly and maintained by envy than hope or any other emotional response [43].

In contrast, increased anxiety in female teenagers to an optimal level results in forgiveness which contributes more to life satisfaction. Among females, life satisfaction is associated with the fulfillment of psychological needs that is internal-directed, particularly when considering the predominant nature of coping styles in female teenagers. Previous studies in the general adolescent population have explained that females tend to rely more on nonproductive or maladaptive coping that involves blaming oneself, keeping problems to themselves, escaping, and anxiety [44]. A similar explanation applies to female teenagers who seek pediatric emergency services have a tendency to use emotion-focused coping than problem-focused coping [45], or who have a history of non-normative childhood experiences which show a tendency to experience internal emotional problems and low self-esteem [46] as well as low self-efficacy and self-regulation [47].

However, the results of this study also support a linear relationship regarding the contribution of forgiveness along with anxiety levels. This is supported by Drive Theory [48] which explains that the correlation between anxiety –especially state anxiety of specific situations– and performance is linear; that higher anxiety leads to better performance. Furthermore, the test results of this study indicate a different relationship pattern when considering the dimensions of forgiveness and the subscale of hope. Among dimensions and subscales may even be distinct although they build the same construct. These results are explained by previous studies on forgiveness and hope which take into account differences and contributions according to their dimensions and subscales [11] [15].

Finally, there is a trend of effect size regarding the correlation with hope – and not life satisfaction – which is associated positively or negatively with increasing anxiety, instead of being the highest or lowest at the moderate anxiety level. Those typical results relate to differences in trend of correlations with hope and life satisfaction, that may be explained by the characteristics of hope, as well as life satisfaction, as found among adolescents. In this study, unlike life satisfaction which is more likely to be normally distributed, the numbers in each category of hope increase with the score (supported by [11]). Previous findings in the population of teenagers explained how the presence of adolescent egocentrism (David Elkind's Theory) in the form of

personal fable can result in bias optimism [24] which then seems to be related to hope [37].

### **3.4. Conclusion**

There was a trend in the correlation between forgiveness and hope, as well as life satisfaction when considering gender and anxiety levels among adolescents living with imperfect family structure. The complexity of dynamics was further found when forgiveness dimensions and subscales of hope were considered. This study supports the influence of sex differences, linear and catastrophe (or rather the U-shaped and inverted U-shaped) model of anxiety and performance, typical characteristics of the adolescent population, and possibly the influence of experienced adversity.

However, the recommendation for further studies is to involve adolescent populations with more diverse experiences, or in populations with different developmental periods, either correlational or comparative. The results of this study can also be used as a consideration in developing intervention programs for adolescents with a certain adversity experience, specifically by paying attention to the contribution of sex, anxiety level, even the forgiveness dimensions and the hope subscales.

### **AUTHORS' CONTRIBUTIONS**

AR designed the study, coordinated the research data collection, analyzed and interpreted the data, drafted and translated the paper. YF La Kahija critically revised the paper for important intellectual content - especially in the discussion -, and proofread it. LNA also critically revised the paper for important intellectual content - especially in the introduction -, and translated it. All authors gave final approval for this publication.

### **ACKNOWLEDGMENTS**

This research was funded by the source of the Faculty of Psychology, Universitas Diponegoro DIPA PNBPN funding Fiscal Year 2019.

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