

## The demographic factors' contribution to the High School Student's level of psychological distress in Malang, East Java

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### Artikel history

Received	Revised	Accepted	Published
2023-07-04	2023-07-16	2023-08-03	2023-08-30

### Keyword :

Adolescence,  
Demographic  
Factors,  
Psychological  
Distress, Gender

### Abstract

Demographic factors contribute to the etiology of psychological distress in adolescents, especially as a mark in identifying the vulnerability of these adolescents to high levels of psychological distress. This study aimed to identify the effects of demographic factors, including age, gender, school origin, and parents' marital status, on the level of psychological distress in adolescents who are studying in high schools in Malang, East Java. This cross-sectional study used the Hopkins Symptoms Checklist 25 (HSCL-25) measuring instrument to measure the level of psychological distress in adolescents and data filling on age, gender, school origin (Public Senior High School/Vocational Senior High School/Islamic Senior High School), and parents' marital status (married, divorced, widow/widower). Eight schools in Malang City were randomly selected to participate in this study. 520 students from eight high schools participated in filling out the questionnaire. The crosstab analysis reports that 53.1% of subjects showed high psychological distress. Based on the results of logistic regression analysis, the gender (OR = 0.55,  $p = 0.002$ ) and school origin (OR = 0.74,  $p = 0.027$ ) factors contributed to the level of psychological distress in adolescents who were studying in high schools. Based on the steadiest contribution from the gender factor, female students were 0.55 times more prone to experiencing high psychological distress than males. Thus, developing promotion and prevention programs in high schools regarding mental health and gender-related issues is crucial.

*How to cite:* Yuniardi, M.S., Widyasari, D.C., & Putri, A.K.N. (2023). The demographic factors' contribution to the High School Student's level of psychological distress in Malang, East Java. *Insight: Jurnal Ilmiah Psikologi*, 25(2), 67-78. doi: <https://doi.org/10.26486/psikologi.v25i2.3277>

## INTRODUCTION

Psychological, cognitive, and psychosocial changes often occur during adolescence (Papalia et al., 2009). These changes are drastic and almost co-occur, as well as the characteristic of adolescence, which is the maturity of the biological aspect that goes beyond the maturity of the psychosocial aspect of teenagers; this is also commonly known as puberty (*Maternal, Newborn, Child and Adolescent Health: Adolescent Health Epidemiology*, n.d.). On the other hand, psychological and social demands on adolescents are also increasing along with the changes in body conditions, academics, and lifestyles in the modern era.

The rapid development of the environment and the period of adolescents' puberty have the potential to cause conflict, either within the teenager itself (internal conflict) or by the surrounding

environment (external conflict) (Papalia et al., 2009). In general, conflict experienced by teenagers can help them to grow and learn about adult life in the future, especially if they can resolve the conflicts they face. However, if adolescents find difficulty in resolving various conflicts that arise during the development period, the potential of having mental health disorders will increase.

Entering the adolescent period, the level of psychological distress increases naturally, especially in the group of female adolescents (Papalia et al., 2009). According to the Baseline Health Research in 2013, there is a 5.7% prevalence of the population of East Java who experiences mental-emotional disorders, and 7.2% of them are aged 15 to 24 years old (BPPK, 2013). Emotional-mental disorder is described as the psychological distress of a person who experiences emotional changes in the form of depression and anxiety (Mirowsky & Ross, 2003).

Furthermore, the research results by the Basic Health Research (RISKESDAS) in 2013 reported that the prevalence of the general population who suffers from high psychological distress levels in Malang is 11.5%, which ranked fourth in East Java (BPPK, 2013). Specifically, previous research was conducted by the research team on adolescent mental in Malang City. The results show that the prevalence of high-level distress is 53.20% (Widyasari & Yuniardi, 2019). These results also align with another study that indicated the high level of social anxiety among students of senior high schools in Malang (Yuniardi, 2019).

If the conditions related to adolescents' mental health continue without appropriate promotional and preventive efforts, this will potentially develop into a more serious psychological disorder as the adolescents enter adulthood (Mubasyiroh et al., 2017). Previous studies reported that mental health problems during adolescence contribute to a lot of serious problems, such as a 25-30% higher chance of dropping out of school (Hjorth et al., 2016), substance use-related problems (Ulibarri et al., 2015), violence (Panter-Brick et al., 2009), and pathological use of the internet (Lam & Peng, 2010). Moreover, a study suggested that mental health condition during study, particularly academic well-being, contributes to the academic achievement of students as well as their goals in the future (Fathiyah et al., 2023).

Some demographic factors are thought to contribute to the psychological distress level in adolescents, such as gender and age. Moreover, there are also psychosocial factors, such as healthy lifestyle and risky behavior (Kinyanda et al., 2013; Skrove et al., 2013), social skills and perceptions of social support (Nilsen et al., 2013), attachment with parents and peers (Ritakallio et al., 2010), psychotic tendencies (Kinyanda et al., 2013). Furthermore, the family environment also significantly affects adolescents' mental health (Fatori et al., 2013).

Based on the description above, this research aimed to identify the demographic factors of psychological distress in adolescents in Malang City. These factors will help various parties to

understand the etiology of psychological distress in adolescents and design preventive and promotional mental health programs.

## METHOD

### Research Design

The design of this study was a cross-sectional study. According to Kumar (2011), the participants of the cross-sectional study are determined based on the inclusion and exclusion criteria. The population of this study was the high school students in Malang, with the following requirements:

1. Adolescents aged 15 – 18 years old
2. Students from the public/vocational/ high schools in Malang

### Sampling Techniques and Number of Samples

Following the theories stated by Kumar (2011) and Gravetter and Forzano (2012), the sampling technique used in this study was random sampling, where each individual in the population had an equal opportunity to be selected as a participant. The random sampling technique also sought to reduce the potential for bias in selecting specific individuals as samples from the population (Gravetter & Forzano, 2012). In this study, researchers conducted a random sampling in the high schools in Malang that are listed in the Ministry of Education. The following eight schools were selected through a simple random sampling technique:

**Table 1.** Lists of High Schools as Research Samples

No.	School's name	Address	Participants	
			Number	%
1	MAN 2 Malang	Jl. Bandung No. 7	59	11.34
2	SMAN 5 Malang	Jl. Tanimbar No. 24	80	15.41
3	SMKN 4 Malang	Jl. Tanimbar No. 22	67	12.91
4	MAN 1 Malang	Jl. Baiduri Bulan No. 40	90	17.34
5	SMK Muhammadiyah 2 Malang	Jl. Baiduri Sepah No. 27	44	8.48
6	SMKN 3 Malang	Jl. Surabaya No. 1	63	12.14
7	SMAN 7 Malang	Jl. Cengger Ayam I/14	52	10.02
8	SMAN 8 Malang	Jl. Veteran No. 37	65	12.52

Before starting the data collection process, this research had been granted permission from several parties, including the Department of Education of Malang City, the Department of Religious Affairs of Malang City, and all schools participating. The researchers and the respective schools arranged the schedule for the data collection process. In total, there are 126 high schools registered in the city's Department of Education. Initially, the researchers selected nine schools comprising 450 students. However, only eight schools agreed, as shown in Table 1. There were 530 questionnaires

distributed to participants according to the number of students allowed by the eight schools to participate in this study. Only 520 questionnaires (98%) were completed and returned to the researchers. From the a priori power analysis using G\*Power (Faul et al., 2009), 520 participants for this study were the reasonable targets for the sample size to detect the estimated effect size at the power of .80 and  $\alpha = .05$ .

### **Research Measurement Tools**

The researchers used the Hopkins Symptoms Checklist-25 (HSCL-25) (Parloff et al., 1954) measuring instrument to measure anxiety and depression in general. HSCL-25 is a self-report with four answer choices on a Likert scale for 25 items each. All items in HSCL-25 were statements about the occurrence and intensity of symptoms of anxiety (10 items) and depression (15 items) felt during the past week (Kaaya et al., 2002; Svensson et al., 2009). The Diagnostic and Statistical Manual of the American Psychiatric Association, IV Edition (DSM-IV) APA (2000) reported that the total score of HSCL-25 is highly correlated and consistent with severe emotional distress of unspecified diagnosis across several populations. According to Kaaya et al. (2002) and Svensson et al. (2009), the researchers set the score on the HSCL-25 questionnaire with 1 (not at all), 2 (slightly disturbing), 3 (somewhat disturbing), and 4 (very disturbing). The calculation of HSCL-25 score was obtained by calculating the average score of 25 items with a cut-off point of 1.75. Scores below 1.75 were included in the low level of psychological distress, while scores above 1.75 were included in the high level. Moreover, this measuring instrument had been translated into Indonesian and had an internal consistency of 0.94 Alpha Cronbach (N=25), which means that the items in HSCL-25 consistently measure psychological distress. In addition, the researchers also collected demographic data on participants, namely school origin (SMA/SMK/MA), age, gender, and parent's marital status.

### **Data Analysis**

The data analysis in this study was carried out in two ways: descriptive data analysis, t-test, One-way ANOVA, and logistic regression. The researchers used two programs to process the data: Microsoft Excel for data tabulation and cleaning and SPSS for Windows 25.0 for statistical analysis. The descriptive statistical analysis techniques used in this study were frequency and crosstab, which aim to verify the amount and quality of the data. The process was carried out to confirm each variable's missing and inappropriate (violated) data. In order to compare the mean and significance of the differences across the demographic data, a T-test and One-way ANOVA were performed furthermore, crosstab analysis aimed to identify the picture of research participants. Next, a logistic regression statistical analysis was used to analyze a set of dependent variables as predictors contributing to the measured independent variables (Pallant, 2004). The predictors to be analyzed in this study were

demographic factors consisting of age, gender, school origin (public senior high schools/vocational senior high schools/Islamic senior high schools), and parents' marital status (married, divorced, and widowed/widower).

## **RESULTS AND DISCUSSION**

### **The Descriptive Research Data**

The participants of this research were adolescents who are currently studying high school in Malang. 530 high school students were willing to participate in this research. After going through the data cleaning process, there were 520 processable data from the students. The overview of the participants listed by their level of psychological distress is illustrated in Table 2 below.

**Table 2.** Illustration of Participants by Level of Psychological Distress

Demography Data	N (%)	Mean	SD	t (age & gender) / F (school origin & parents' marital status)	p	Level of Psychological Distress ( $\geq 1.75$ )		Total
						Low	High	
<b>Age</b>								
14-16	428 (82.3%)	1.14	0.35	-1.88	0.060	209 (48.8%)	219 (51.2%)	428 (100%)
17-19	92 (17.7%)	1.21	0.40			35 (38.0%)	57 (62.0%)	92 (100%)
<b>Gender**</b>								
Female	335 (64.4%)	1.43	0.50	3.18	0.002	140 (41.8%)	195 (58.2%)	335 (100%)
Male	185 (35.6%)	1.29	0.46			104 (56.2%)	81 (43.8%)	
<b>School Origin**</b>								
Public Senior High School	197 (37.9%)	1.50	0.50	6.17	0.002	98 (49.7%)	99 (50.3%)	197 (100%)
Vocational Senior High School	175 (71.5%)	1.46	0.50			94 (53.7%)	81 (46.3%)	175 (100%)
Islamic Senior High School	148 (28.5%)	1.64	0.48			52 (35.1%)	96 (64.9%)	148 (100%)
<b>Parents' Marital Status</b>								
Married	462 (88.8%)	1.53	0.49	1.14	0.320	217 (47.0%)	245 (53.0%)	462 (100%)
Divorced	34 (6.5%)	1.62	0.49			13 (38.2%)	21 (61.8%)	34 (100%)
Widow/Widower	24 (4.6%)	1.42	0.50			14 (58.3%)	10 (41.7%)	24 (100%)
<b>Total</b>	520 (100%)	1.92	0.63			244 (46.9%)	276 (53.1%)	

Based on Table 2, most participants were females, aged 14 – 16 years old, and from public senior high schools. Besides, based on the parents' marital status recorded, 88.8% of students who participated in this research had parents with intact marital status. The most important thing is that the students' psychological distress level is generally categorized as high (mean = 1.92; SD = 0.63) and indicated by a mean higher than 1.75. In line, 53.1% of high school students in Malang experienced psychological distress.

In addition, it is noticeable that more female students (58.2%) reported having a higher level of psychological distress than the male participants (43.8%). Similarly, students from Islamic senior high schools (64.9%) were reported to have a higher level of psychological distress compared to students from public senior high schools (50.3%) and vocational senior high schools (46.3%), respectively. In total, female students (mean = 1.43; SD = 0.50) were also reported to have a higher level of psychological distress than male students (mean = 1.29; SD = 0.46), and the difference is significant ( $t = 3.18$ ;  $p = 0.002$ ). Similarly, the students coming from Islamic senior high schools (mean = 1.64; SD = 0.48) were also reported to have a higher level of psychological distress than students from public senior high schools (mean = 1.50; SD = 0.50) and vocational senior high schools (mean = 1.46; SD = 0.50), respectively. The difference among the school origins was also significant ( $F = 6.17$ ;  $p = 0.002$ ). There were no significant differences in both between age ( $t = -1.18$ ;  $p = 0.060$ ) and among the parents' marital status ( $F = 1.14$ ;  $p = 0.320$ ).

### The Contribution of Demographic Factors on the Level of Students' Psychological Distress

Furthermore, the demographic factors contributing to psychological distress in adolescents studying in Public Senior High School/Vocational Senior High School/Islamic Senior High School in Malang are described in Table 3 below.

**Table 3.** Psychological Distress Level Based on the Contribution of Demographic Factors

Factors	Odds Ratio (CI 95%)	<i>p</i>
Age	1.50 (0.93 – 2.42)	0.098
Gender**	0.55 (0.38 – 0.80)	0.002
School Origin*	1.29 (1.04 – 1.61)	0.022
Parents' Marital Status	0.82 (0.56 – 1.19)	0.302

*a. Dependent variable: Psychological distress*

\* $p < 0.05$ . \*\* $p < 0.01$ . \*\*\* $p < 0.001$ .

There were four demographic factors (gender, age, school origin, and parents' marital status) and the levels of psychological distress analyzed in the regression model. Based on Table 3, it can be seen that gender (OR = 0.55,  $p = 0.002$ ) contributed significantly to the level of psychological distress. The steadiest demographic factor that contributed to the level of psychological distress was gender, where female students in all schools were 0.55 times more prone to experiencing high psychological distress

compared to male students. Furthermore, the school origin factor ( $OR = 0.74$ ,  $p = 0.027$ ) also contributed to the level of psychological distress in adolescents, although it was weaker than the gender factor.

## DISCUSSION

The main objective of this research is to identify the four demographic factors (age, gender, school origin, and parents' marital status) that possibly contribute to psychological distress among students in Malang City. The results supported some hypotheses regarding gender and school origin contributing to psychological distress. Meanwhile, the other hypotheses need to be supported due to the possibility of the imbalance of the subject's proportions. The detailed explanation is discussed below.

First, the gender factor showed the most significant contribution with an odds ratio of 0.53 ( $p = 0.001$ ), indicating that female students were 0.53 more prone to experiencing high psychological distress than male students. This result is also in line with the previous descriptive analysis of this study, which demonstrated that female students were reported having a higher level of psychological distress (mean = 1.43;  $SD = 0.50$ ) and a more significant proportion of female students who were reported having a higher level of psychological distress (58.2%). This finding was in line with the statement of Mirowsky and Ross (2003), who stated that women tend to experience a higher level of psychological distress than men. Similarly, the studies among adolescents in Norway (Dalen, 2014) and in the United States of America (Merikangas et al., 2010) stated that female school students were reported to have a higher level of psychological distress. This phenomenon could be possible because male students tend to adapt quickly to different social environments compared to female students, especially in social settings (Al-Qaisy, 2010).

Meanwhile, school origin also contributed to the level of psychological distress experienced by students ( $OR = 0.74$ ,  $p = 0.027$ ). Students who attend Islamic senior high schools (mean = 1.64;  $SD = 0.48$ ) tend to be more prone to experiencing high psychological distress compared to students who attend public senior high schools (mean = 1.50;  $SD = 0.50$ ) or vocational senior high schools (mean = 1.46;  $SD = 0.50$ ). This trend might be due to the different school curricula between the schools, where the public senior high schools only apply a national curriculum, the vocational senior high schools apply only a vocational curriculum, and the Islamic senior high schools apply two curricula (National curriculum and religious curriculum) (Humas, 2023; Khalila, 2022). Based on the differences in the curriculum, it is possible that students have different academic demands, and the students from Islamic senior high schools have a higher demand.

This result is slightly different from the result of a study conducted by Wardhani et al. (2019). Her study investigated the difference in academic stress between Islamic senior high school students and public senior high school students. The result reported that the difference was not significant. However,



this study only compared two schools, and the total number of participants was only 120 students. In addition, there needs to be a detailed explanation of the validity and reliability of all measurements used. From these points, the result being reported should be taken cautiously.

The research team of this study searched for any study investigating the differences in mental health among students from public senior high schools and Islamic senior high schools through several popular search engines, such as Google Scholar, Google, and Bing. Only a study conducted by Wardhani et al. (2019) was found. This finding indicates that future studies on this related topic are still essential.

Moreover, although there are differences in psychological distress based on students' age and parents' marital status of students in Malang City, the differences were not significant. The logistic regression analysis also reported that the above demographic factors did not contribute to the psychological distress. These results may be related to the unbalanced proportion of the sample size across groups. For instance, the proportion of students aged 14-16 years old was 82.3%, while the proportion of students aged 17-19 years old was 17.7%. The unbalanced sample size dramatically reduces the statistical power (Glen, 2023; Rusticus & Lovato, 2014) leads to Type 1 error rates, and affects the assumption of equal variances in tests like ANOVA (Rusticus & Lovato, 2014), which is used in this study.

One of this study's limitations is the one discussed in the paragraph above, which is the problem with the unequal proportion size across demographic factors. Further study should consider this an essential consideration in recruiting research subjects. Quota sampling technique is recommended. Moreover, this is also a cross-sectional study with relatively homogenous subjects. Consequently, the results of this study cannot explain a causal effect cannot be generalized.

## **CONCLUSION**

This research measured the level of psychological distress in adolescents studying in high school or equivalent in Malang City based on the four demographic factors (age, gender, school origin, and parents' marital status). Gender contribution is the profound finding in this study. Fostering gender-sensitive mental health promotion programs in schools is essential, particularly as an investment in a better mental health status for future generations. The school origin also contributed to the students' psychological distress, where the differences in curricula may play a role in the explanation. However, further studies are needed due to the need for more references.

Furthermore, more than half of the subjects reported high psychological distress. Therefore, developing mental health promotion programs for adolescents is critical and should be seen as an investment for a better mental health status and longevity of the youth generation. Therefore, the researchers encouraged schools to collaborate with various parties, such as parents, teachers, peers, and

school external parties, to empower students to find sources of stress and support. This attempt will help students manage their psychological distress while preventing the development of the psychological disorder in adulthood.

## ACKNOWLEDGMENT

The authors would like to thank all the subjects participating in this research.

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