

A Study on the Impact of a Four-Week Elderly Volunteer Service on the Level of Conscientiousness of High School Students

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Abstract. This study aims to explore whether there are measurable changes in the sense of conscientiousness (including the awareness of completing tasks on time and attention to the needs of others) of high school students after participating in community elderly assistance volunteer activities around them, compared to before the activities. Existing research has not focused on this age group and has not explored the impact of short-term volunteering on specific dimensions of conscientiousness, so this study can fill this gap. The study adopted a pre- and post-test experimental design, taking students in grades 10 and 11 from three local high schools as the subjects. Those who had volunteered for more than 20 hours in the past half year were excluded and randomly divided into an experimental group (participating in a four-week fixed-duration volunteer) and a control group (without a volunteer). Data were collected through the standardized sense of conscientiousness scale (measured one week before and after the activity), the attendance and task reports of the experimental group, with self-efficacy as the mediating variable and voluntary engagement as the moderating variable. The predicted conscientiousness score of the preset experimental group was higher, self-efficacy played a partial mediating role, and the improvement was more obvious in those with high engagement. This research can provide a basis for schools and communities to cultivate teenagers' sense of conscientiousness and enrich relevant theories. However, the sample only covers local ordinary high schools, which may limit its promotion.

Keywords: Volunteering, High School Students, Conscientiousness, Self-efficacy, Adolescent Personality Development

1. Introduction

The question I want to study is: After high school students participate in a four-week volunteer service activity (such as regularly helping the elderly in the community), have there been measurable changes in their level of conscientiousness (such as the awareness of completing tasks on time, attention to the needs of others, etc.) compared with before the activity? It is hypothesized that participating in four-week volunteer service activities will significantly enhance the sense of conscientiousness of high school students.

The reason for choosing to study this issue is that high school students are at a critical stage of personality development [1]. As an important personality trait, a sense of conscientiousness not only affects their academic performance but is also crucial for the cultivation of their future social adaptability [2]. Volunteer service, as a practical activity that enables teenagers to have in-depth contact with society and undertake actual responsibilities [3], its connection with the changes in the trait of sense of conscientiousness is worthy of in-depth exploration. In this study, "four-week volunteer service activities" refer to short-term practical interventions that are continuous and targeted. "Conscientiousness" is specifically detailed as the awareness of completing tasks on time (reflecting a sense of conscientiousness for tasks) and the concern for the needs of others (reflecting a sense of conscientiousness for others). By examining whether these specific dimensions have undergone measurable changes, it can not only enrich the theoretical research on the relationship between the personality development of teenagers and social practice, but also provide a practical basis for schools and communities to carry out the work of cultivating teenagers' sense of conscientiousness. The audience of this study mainly includes high school educators, researchers of adolescent personality development, and community volunteer service organizers.

There are currently three papers, each with its own research focus. Hyde and Knowles [4] focused on the influencing factors of Australian college students' willingness to participate in community service. By analyzing variables such as personal traits, social environment, and motivation, they identified the key predictive factors affecting college students' willingness to volunteer, providing a theoretical framework for understanding the preconditions of youth volunteer behavior. However, it did not involve the changes in individual traits after volunteer service. The research by Canas-Lerma, Campos-Vidal and Verger [5] focused on the relationship among volunteers' work engagement, sympathetic satisfaction, sympathetic fatigue, self-care and volunteer service motivation, exploring the interaction of these factors during the volunteer service process, but did not focus on the trait changes of the adolescent group. Joseph and Carolissen's [6] research explored the impact of volunteer leadership on the retention rate of student volunteers, emphasizing the role of leadership in maintaining students' participation in volunteer services. It also did not touch upon the influence of volunteer services on individual conscientiousness traits.

There are obvious research gaps in these three documents. From the perspective of the research subjects, none of them focused on the high school student group. From the perspective of the research content, none of them explored the specific changes in the personality traits of individual sense of conscientiousness after volunteer service, especially the changes in dimensions such as the awareness of completing tasks on time and paying attention to the needs of others. From a research perspective, more attention is paid to the pre-volunteer willingness, psychological state during the process or participation retention, while there is a lack of tracking of the changes in key personality traits of teenagers after short-term volunteer services.

2. Present work

My experiment took high school students as the research subjects. Focusing on a four-week short-term volunteer service activity, through pre- and post-test comparisons, it specifically measured the measurable changes in the specific dimensions of their sense of conscientiousness personality traits. This can directly fill the gaps in existing literature regarding research subjects, core concerns, and tracking of short-term intervention effects. Thus, it provides new empirical support for understanding the relationship between volunteer services and the development of teenagers' sense of conscientiousness.

3. Method

This research will strictly adhere to the ethical norms of psychological research. Before its official commencement, written informed consent forms will be provided to all participating students and their legal guardians (parents). The informed consent form will be presented in clear and understandable language, detailing the research purpose, research process, participation rights, data processing methods, as well as the research contact person and ethical consultation methods. After the student and their parents have fully read and understood the content, both parties shall jointly sign the informed consent form to confirm their voluntary participation in this study before they can be included in the research sample.

3.1. Participants

The data will be collected from the first-year and second-year high school students of three local regular high schools. When selecting samples, I will exclude students with long-term volunteer service experience (such as having participated for more than 20 hours in the past six months) to reduce the interference of experience on the results. At the same time, I require students to voluntarily participate and be able to ensure the full completion of the four-week community elderly assistance volunteer service. The sample size is strictly determined based on the 171 people obtained from the efficacy analysis. During the recruitment process, I will continuously record the number of valid samples (i.e., students who have completed the pre-test, fully participated in the volunteer service, and completed the post-test). Data collection will be stopped when the number of valid samples reaches 171. In the event of a mid-course withdrawal (such as being unable to continue participating in volunteer services due to personal reasons or failing to complete the post-test), I will recruit additional students according to the same standards to ensure that the final valid sample size remains stable at 171 people, to guarantee that the statistical results of the research meet expectations.

My primary hypothesis is that participating in four-week volunteer service activities will significantly enhance the sense of conscientiousness of high school students. We performed a power analysis using the software package G*Power [7]. The results indicated that with an effect size of 0.25, $\alpha=0.05$, power=0.9, 171 participants will be needed in the study.

3.2. Study design

The research will adopt a pre- and post-test experimental design, selecting students from grades 10 and 11 of several high schools as the research subjects. The experimental group and the control group will be determined through random sampling. Students in the participating group are required to engage in a four-week community elderly assistance volunteer service with a fixed duration each week (such as three hours per week), including specific tasks such as helping the elderly with their daily life and chatting with them. Students in the control group did not participate in this volunteer service and maintained a normal pace of study and life. One week before the start of the activity (pre-test) and one week after the end of the activity (post-test), the two groups of students were asked to fill out the Big Five Conscientiousness Likert Scale, respectively. At the same time, the volunteer service attendance records and task completion report of the participating group students were collected to comprehensively compare and analyze the changes in the conscientiousness of the participating group students.

The independent variable is participation in the 4-week volunteer service activity which is divided into the experimental group (receiving the four-week volunteer service intervention) and the control group (not participating in the volunteer service activity and maintaining the daily study and life state). The dependent variable is the level of conscientiousness of high school students, which is specifically measured through Big Five personality test. Participants will be given a Likert-type scale where they can rate their level of agreement to a statement provided by me according to the context of conscientiousness and volunteer service. This part of the scale will ask questions such as "In the activity of helping the elderly, I will conscientiously complete the things I have promised to do" and "Even if volunteer service is a bit boring, I will still persist in finishing it", etc. When I score, I use a scale of 1 to 5 for participants to choose from. A score of 1 indicates strongly disagree, while a score of 5 indicates strongly agree. Finally, I average the scores of all the questions, and the result is the total score for "conscientiousness". The higher the score, the stronger the sense of responsibility of this student. In this way, we can see their situation in terms of completing tasks on time and paying attention to others' needs.

The mediating variable might be self-efficacy, that is, the confidence and ability perception that high school students gain in completing tasks during volunteer services. The measurement of self-efficacy will be conducted using the General Self-Efficacy Scale (GSES), which consists of 10 questions and is specifically designed to assess an individual's confidence in their ability to successfully handle various challenges. When conducting specific measurements, I will ask the participants to rate based on the adjusted descriptions of the volunteer service scenarios, such as "I am confident in successfully completing all the tasks of helping the elderly in the volunteer service" and "Even if I encounter difficulties in communicating with the elderly, I believe I can solve them", etc. A 4-point scoring method will be adopted (1= completely inconsistent, 4= completely consistent). The scores of all the questions are added up and the average is taken. The higher the score, the stronger the self-efficacy of the participants in the volunteer service situation. This is used to quantitatively analyze its mediating role between volunteer service and the improvement of responsibility.

The moderating variable might be the degree of engagement in volunteer services. I will use the attendance record of volunteer activities to document the actual duration of high school students' participation in volunteer services. By using the service log, students can record in detail the number of times they take the initiative to undertake tasks each week, the completion status of the tasks, and their thoughts during the service process. A standardized scoring method is adopted. The person in charge of the volunteer service or the instructor scores the students based on their performance in the service (such as service attitude, interaction with the service recipients, and the quality of task completion, etc.) according to a unified standard, so as to clearly and standardly quantify the degree of students' commitment to the volunteer service. It is expected that students with a higher degree of engagement will have a more significant improvement in their sense of responsibility.

The core hypothesis is mainly tested by repeated measures analysis of variance (ANOVA). High school students who participated in volunteer services were taken as the research subjects. The "measurement time" (before and after the activity) was set as the independent variable within the group, and the score of the sense of conscientiousness was taken as the dependent variable. Through this analysis, the differences in the scores of the same group of students at the two time points were compared to determine whether there was a statistically significant change in their sense of conscientiousness after participating in four weeks of volunteer services. Before conducting the analysis, it will be verified whether the data meet the conditions such as normal distribution, homogeneity of variance and sphericity assumption.

3.3. Procedures

This research strictly adheres to the ethical norms of psychological research. The implementation details at each stage are as follows:

Preparation stage (1-2 weeks before the research): first communicate with the moral education offices and class teachers of the three target high schools. Through class meetings, present the research objectives and participation methods. When screening, in addition to excluding students who have provided more than 20 hours of volunteer service in the past six months, it is also confirmed that the students have no special time conflicts (such as long-term after-school training, sick leave, etc.). A total of 171 valid candidates were finally determined. Secondly, the informed consent form that needs to be provided to students and their parents, in addition to the regular content, should also include a specific time schedule for community volunteer services (such as 16:00-18:00 on Wednesday and 9:00-11:00 on Saturday) and a safety guarantee statement (the community is equipped with dedicated personnel to accompany, and there is a parents' pick-up and drop-off confirmation mechanism for students' round trips). After signing, the groups were grouped using the random number table method. The grouping results were recorded by third-party staff. The research subjects did not meet the grouping information for the time being to avoid subjective deviations. At the same time, community service personnel should be trained in advance to clarify the service performance scoring criteria (scoring on a 1-5 scale from three dimensions: punctuality, task completion, and enthusiasm for interacting with the elderly), and the duration of filling out the test form should be predicted (ensuring that each filling does not exceed 15 minutes to reduce students' fatigue).

Implementation phase (6 weeks in total): The pre-test (Week 1) was conducted in the school's computer classroom, using an online questionnaire system (with a time limit for filling in). Researchers provided on-site guidance and offered one-on-one question reading and recording services to students with visual or operational difficulties. During the intervention stage (weeks 2 to 5), the experimental group signed in before each service and submitted an electronic task report with photo evidence within 12 hours after each service. The control group confirmed no additional volunteer services through a 5-minute short questionnaire every Friday. Those who violated the rules were excluded from the sample. The post-test (Week 6) was conducted in the same environment as the pre-test. The order of the questionnaire questions was shuffled. At the same time, short feedback questionnaires were distributed to the parents of the experimental group as an auxiliary reference for changes in sense of conscientiousness.

Data organization stage (1-2 weeks after the post-test): Export the raw data from the online questionnaire system, conduct an initial screening using Excel (excluding questionnaires with a filling time of less than 8 minutes or more than 5 consecutive questions with the same option), and then import it into SPSS for cleaning. The attendance rate, community score and task report completeness of the experimental group were standardized and then combined into the "Volunteer Service engagement degree" score. At the same time, a two-person verification mechanism should be established. The data of 10% of the samples should be re-entered and verified. If the error rate exceeds 3%, all the data should be rechecked to ensure there are no entry errors.

4. Results

In terms of the main effect, through repeated measures analysis of variance (ANOVA), it was found that the scores of conscientiousness of high school students who participated in the four-week

volunteer service were significantly higher after the activity than before, indicating that volunteer service has a significant effect on enhancing conscientiousness (Figure 1).

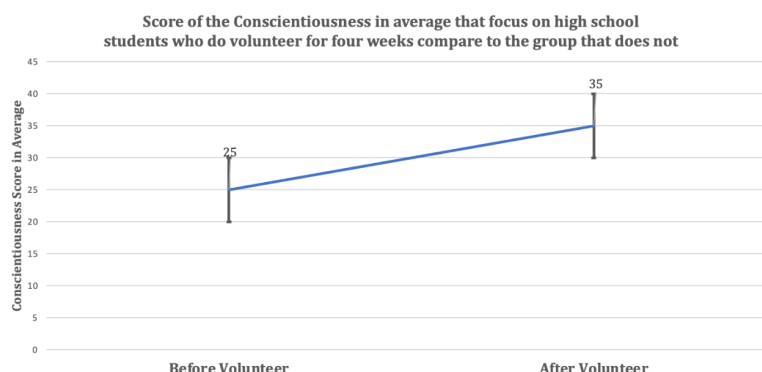


Figure 1. The predicted result of the score of the conscientiousness in average that focus on high school students who do volunteer for four weeks compare to the group that does not

In terms of mediating effects, the score of self-efficacies also significantly increases after the activity. Moreover, through mediating effect tests (such as the Bootstrap method), self-efficacy plays a partial mediating role in the relationship between volunteer service and the enhancement of conscientiousness. That is, volunteer service indirectly promotes the improvement of students' sense of conscientiousness by enhancing their self-efficacy.

In terms of the moderating effect, the degree of volunteer service investment (such as weekly participation duration and the number of times one takes on tasks voluntarily) is positively correlated with the change in sense of conscientiousness. Students with a higher degree of investment have a greater increase in sense of conscientiousness, indicating that the degree of investment has a moderating effect on the relationship between the two.

In the secondary analysis, gender differences may not be significant, that is, there is no statistical difference in the extent of improvement in sense of conscientiousness among high school students of different genders. Students with a lower initial level of sense of conscientiousness had a significantly greater change in their test scores before and after that than those with a higher initial level. Meanwhile, the weekly volunteer service duration is moderately positively correlated with the change in sense of conscientiousness, indicating that the more time is invested, the more obvious the improvement in sense of conscientiousness.

5. General discussion

This study aims to explore whether there are measurable changes in the sense of conscientiousness traits (specifically reflected in the awareness of completing tasks on time and the degree of attention to the needs of others) of high school students after participating in a four-week community volunteer activity for the elderly (such as assisting the elderly in handling daily affairs and chatting with them) compared to before the activity. High school students are in a critical period of personality development. Conscientiousness not only affects academic performance but is also crucial for cultivating future social adaptability. However, most existing studies focus on college students or ignore the impact of short-term volunteer activities on specific dimensions of conscientiousness. Therefore, this study can fill this gap.

Based on the preset supportive results (the post-test conscientiousness scale score of the experimental group was significantly higher than that of the pre-test, self-efficacy played a partial

mediating role, and the improvement of conscientiousness was more obvious among those with high volunteer engagement), combined with the experimental design of the pre - and post-tests, the scale, attendance records and other data, it can be clearly seen that short-term community elderly assistance volunteer activities can effectively enhance the sense of conscientiousness of high school students. This change is not only reflected in the quantitative scores, but it also aligns with the experiences of task practice and responding to others' needs during the volunteer process, confirming the promoting effect of practical intervention on the development of personality traits.

However, there are still alternative explanations for this experiment. For instance, the experimental group might be affected by demand characteristics by trying to figure out the aim of the study and meet researcher's expectations [8], or additional factors such as implicit moral education activities in schools (such as theme class meetings) and family guidance during the same period [9] might have indirectly promoted the improvement of sense of conscientiousness, rather than being solely influenced by volunteer activities.

Future research can be further expanded. On the one hand, the duration of voluntary intervention (such as 12 weeks) can be extended to explore the sustainability and stability of changes in sense of conscientiousness. On the other hand, by comparing different types of volunteer activities such as child assistance and environmental protection, people can analyze the similarities and differences in the impact of "differences in service recipients" on sense of conscientiousness. The practical significance of this study lies in providing specific references for schools and communities to design programs for cultivating teenagers' sense of conscientiousness (such as clarifying the effectiveness of 4-week short-term volunteer work), and theoretically enriching the research on the connection between teenagers' personality development and social practice.

In terms of limitations, the preset samples were only from three local regular high schools, and those with long-term volunteer experience were excluded. As a result, it is difficult to directly extend the results to remote areas or vocational high schools. At the same time, relying on the student self-rating scale, subjective biases may affect the objectivity of the data [10]. Subsequently, multi-source data such as teacher and parent evaluations need to be included to improve the research.

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