

Application of quantitative research to psychology dissertations—An analysis of self-efficacy in mediating tests of perceived doctor-patient relationship and work engagement in medical psychology

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Abstract: Quantitative research involves examining the quantitative relationship between each parameter of the research object and conducting comparative analysis of certain properties, characteristics, and interrelationships among multiple objects in a quantitative manner. Mediated effect analysis is a commonly used research tool in domestic quantitative research. This paper extensively explores the proper implementation of mediated effect analysis using the questionnaire method and data processed by SPSS. It analyzes the current data results and proposes relevant suggestions.

1. The concept of quantitative research

The quantitative research method, also known as quantitative research, is a significant approach in social science research. It employs rigorous logic and quantification to investigate various aspects of society. This method uncovers the quantitative nature of objects or phenomena, and its research process is characterized by strong objectivity and certainty.

In the field of psychology, quantitative research methods encompass various key components, including the research object, research purpose, and research process. These aspects provide an understanding of quantitative research methods. The research process of quantitative research methods follows a fundamental logical method known as hypothesis-deduction. It typically begins with the formulation of propositions or hypotheses, followed by the operationalization of concepts within these hypotheses [1]. Subsequently, measurement tools are developed, and empirical information is collected through measurement and observation. Finally, the hypotheses are tested through data analysis.

2. The definition of intermediary effect

Consider the effect of the independent variable X on the dependent variable Y. If X affects Y by influencing the variable M, then M is said to be the mediating variable, which clarifies "how" and "why" a relationship and process arises.

The 1981 paper by social psychologists Judd and Kenny was the seminal work that introduced mediating effects analysis into the evaluation of social science programs [2]. Since then, linear regression-based mediating effects analysis has been widely used in psychology, sociology, and other fields.

The results in a psychology dissertation may not be influenced by one variable alone but maybe "mediated" by other variables.

The analysis of mediating effects that we will discuss next in this paper does not refer to the exploration of causality as a channel in general, but specifically to how quantitative analysis can be used to look at the application of mediating effects in the paper.

3. Determination of selected quantitative research methods for case paper research

Initially, three variables were selected in the writing of the dissertation: medical psychology perceived doctor-patient relationship, work engagement, and self-efficacy. However, psychology papers are often characterized by systematicity, rich theory and methodology, and practicality, but the logical chain between them is often long, perhaps the cause is a hidden cause of the result, or perhaps the result is an unexpected consequence of the cause [6]. And there are numerous categories of methods used in quantitative research papers, which have undergone a continuous evolution from simple to complex. Since the 21st century, more and more new advanced quantitative methods - such as causal inference, tracking surveys, spatial analysis, big data, etc. The case paper concludes with a large amount of past data support, concluding that the three can establish a research causal relationship between the problem and the data. It also inferred the existence of mediating effects for its three variables in conjunction with existing research results [5].

4. Application cases of intermediary effect

A survey study was conducted to understand the relationship between medical psychology doctor-patient relationship conflict experience and self-efficacy and its work engagement and to explore whether self-efficacy has a mediating effect between doctor-patient conflict experience and work engagement. The following study components were set Figure 1:

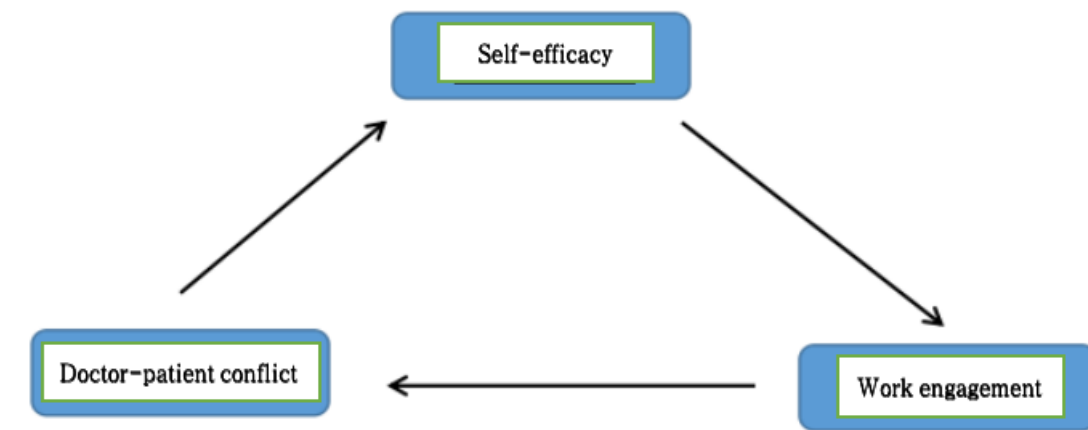


Figure 1: Hypothetical model of self-efficacy mediating effects

Table 1: Self-efficacy in medical psychology perceived doctor-patient relationship and work engagement mediated effect analysis

Variables	Self-efficacy (M)	Work engagement(Y)	
	First layer	Second layer	Third layer
B	-0.47	-0.94	-0.50
			0.92
Medical Psychology Perceived Doctor-Patient Relationship (X)	-0.78***	-0.80***	-0.43***
Self-efficacy (M)			0.48***
F	418.94***	490.83***	375.31***
R ²	0.60	0.64	0.73
ΔR ²	0.60	0.64	0.73

Note: *p<0.05, **p<0.01, ***p<0.001

5. Discussion and analysis of mediating effects

According to Table 1, in the first level regression, the total medical psychology perceived the doctor-patient relationship score (X) was set as the independent variable and the total self-efficacy score (M) was set as the dependent variable for regression analysis. $p < 0.05$ indicates that medical psychology perceived doctor-patient relationship was significantly negatively related to self-efficacy in general [7].

Among the three-level regressions, medical psychology perceived doctor-patient relationship (X) was used as the independent variable, self-efficacy (M) as the mediating variable, and work engagement (Y) as the dependent variable, and the regression analysis was conducted sequentially [4]. The p -value < 0.05 in medical psychology perceived doctor-patient relationship and work engagement passed the significance test, and the p -value < 0.05 in self-efficacy and work engagement. multiple regression analysis showed that the incremental prediction of self-efficacy on work engagement was significant, with the variance explained increasing from 60% to 73%, and the coefficient of work engagement changed after the addition of the self-efficacy variable changed, suggesting that self-efficacy can act as a partial mediating variable and that medical psychology perceived doctor-patient relationship can have an impact on work engagement through the mediating role of self-efficacy [3].

The regression analysis concluded that there is a partial mediating effect of self-efficacy in medical psychology perceived doctor-patient relationship and work engagement.

Since medical psychology's perceived doctor-patient relationship, self-efficacy, and work engagement are two-by-two correlated, the results of the multiple stepwise regression analysis of medical psychology's perceived doctor-patient relationship, self-efficacy, and work engagement, and the test results of the mediating effect showed that medical psychology's doctor-patient relationship can affect its medical psychology degree work engagement level both directly and indirectly through the partially mediating effect of self-efficacy work engagement level.

6. Examining the significance of mediating effects in psychology papers

■ Can contribute to a better understanding of the particular variable being examined itself. Examining the existence of causal effects through data gives us more reason to believe that the observed causal effects are not coincidental, and thus to better understand a phenomenon in psychology.

■ Once this causal model of mediated channel effects on outcomes is established, it is easier to determine whether the findings can be generalized to other aggregates, other institutional settings, and other similar treatment measures, in other words, to speculate whether such treatment effects will be visible in other contexts by examining whether particular channels work [8].

■ If this variable of interest is derived from human design and intervention, knowledge and experience about the channels through which it works will help to target and improve the design and intervention to be particularly conducive to impact through specific channels, thereby enhancing the effectiveness of its work.

7. Conclusion

As an important part of psychological research, quantitative research is continuously summarized and refined by people using wisdom and scientific thinking in the process of engaging in scientific research. In China, although most of the early psychological research is reflected in qualitative research, quantitative research is relatively rare, and interview and group-assisted research methods have always occupied the mainstream of psychological research methods. However, with the expansion of the field of psychological knowledge in recent years, the application of quantitative research methods has formed a certain scale, and psychology is increasingly permeated with the content of sociology and statistics.

In addition, psychologists have continued to try to use quantitative research methods to explain psychological theories and psychological phenomena, and quantitative analysis methods have gradually received the attention of the psychological community. In the coming period, not only the application of quantitative research methods themselves will increase but also the combination of quantitative research methods with qualitative research methods will be an important development direction for the use of methods in psychological research.

Therefore, in the development of psychology at this stage, we should, based on the existing research results, conduct in-depth research on the proper selection and application of quantitative research methods, determine the research fields to which quantitative research methods are applicable, and correctly handle the relationship between quantitative and qualitative research methods, so as to promote the theoretical research of psychological methodology and provide methodological guidance for the subsequent construction of the psychological methodology system and the practice of psychologists. In addition, we will provide methodological guidance for the subsequent construction of the psychological methodology system and the practice of psychologists, so that psychology can adhere to its own research methods and practical characteristics, and absorb and learn from related research methodology theories to promote the maturation and development of psychological research.

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