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RESEARCH ARTICLE

University Social Responsibility and Medical Students' Volunteering: A TPB Perspective

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ABSTRACT

Purpose: This study is to examine the impact of perceived university social responsibility (USR) on the volunteer service behavior of medical college students in Jiangxi Province, China, using the theory of planned behavior. The mediating role of volunteer service motivation is also explored. **Methodology:** Convenience sampling was used to select 700 students from 11 medical colleges in Jiangxi Province to participate in a questionnaire survey. SPSS and AMOS were used for statistical analysis. **Findings:** The results showed that University social responsibility had a significant direct positive predicted on volunteer service behavior (β = .724, p < .001). University social responsibility also had a significant positive impact on volunteer service motivation (β = .623, p < .001), and motivation further positively affected volunteer service behavior (β = .428, p < .001), forming a significant mediating path. **Implications for Research and Practice:** This study enriches the application of the Theory of Planned behavior within the context of university social responsibility and medical education, extending the theoretical perspective on volunteer motivation and behavior. From a practical standpoint, the findings suggest that universities should integrate social responsibility education with professional training, refine incentive mechanisms for volunteer service, and design targeted programs to enhance students' sense of responsibility and sustained engagement. These insights also provide valuable references for educational management and policy development.

Keywords: Medical students; University social responsibility cognition; volunteer motivation; volunteer behavior

1. Introduction

In recent decades, University Social Responsibility (USR) has become a salient dimension of higher education worldwide. Beyond teaching and research, universities are increasingly expected to address societal challenges, foster ethical citizenship, and support sustainable development—expectations that have become more pronounced amid global uncertainty and public health crises. Among the many implementation pathways, volunteer service is one of the most visible and actionable expressions of USR, especially in medical education where training is closely tied to human well-being.

In recent years, a growing number of institutions have incorporated USR as a 'third mission' into

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strategic and operational frameworks, emphasising coordinated progress in educational quality, research output, environmental stewardship and social engagement across multiple stakeholder groups [7][37][47]. However, whether institution-level initiatives translate into students' sustained volunteering ultimately depends on how students perceive and internalise these institutional values [15] [30] .

Empirically, when students perceive their university as responsible to students, communities, and society, such cognition strengthens identification with the institution and shapes pro-social engagement on campus [48][52][25]. In medical education, especially post-COVID-19, service-learning and organized volunteering have been emphasized as vehicles to cultivate professionalism, empathy, and civic responsibility, and to mobilize health-related human resources when communities face public-health strains [35,36] .

In mainland China, medical schools have scaled up curricula and co-curricular programs that highlight professional ethics and social accountability; nonetheless, empirical studies still report a gap between high willingness and uneven participation in volunteering across majors and years of study [25][34][36]. Jiangxi Province—characterized by sizeable rural populations and varied health-service needs—offers a pertinent setting to examine how students' cognition of USR translates (or fails to translate) into volunteer motivation and behavior in medical universities.

Prior studies have shown that responsibility-related beliefs and perceived social value are associated with students' volunteering, yet most explanations foreground individual traits or proximal attitudes, with insufficient attention to institution-level University social responsibility as an upstream driver and to the mechanisms involved [49]. In medical education, strengthened professional identity, clinical training demands and variation in opportunity structures may further condition the translation from institutional values to individual behavior, leading to differences across schools and training stages [6]. Consequently, a mechanism-oriented framework that integrates institutional and individual levels is needed to explain how students' cognition of USR is converted through psychological processes into stable volunteering behavior.

Anchored in the Theory of Planned behavior (TPB; Ajzen [3]), this study positions institution-level University social responsibility upstream of the TPB pathway and examines how it influences volunteering behavior via attitudes, subjective norms and perceived behavioral control as embodied in volunteering motivation, thereby extending TPB's explanatory scope. In addition, drawing on a functional–motivational perspective, we test whether the cognition → motivation → behavior pathway manifests as partial mediation and, using a multidimensional USR lens (operational, legal, volunteer and community responsibilities), clarify which institutional cognitions are more behavior-proximal.

Mapping the proposed relationships to TPB's three modifiable components identifies actionable levers for medical schools: shaping attitudes through curriculum and service-learning; strengthening subjective norms via mentor/peer modelling and recognition; and enhancing perceived behavioral control through flexible scheduling, skills training and credit recognition. Platform-based collaboration between universities and communities can further lower participation barriers and facilitate the conversion of value identification into sustained volunteering.

This study aims to: (1) delineate the relational structure among medical students' University social responsibility, volunteering motivation and volunteering behavior; (2) test the mediating role of volunteering motivation within the TPB framework; and (3) provide evidence-based guidance for USR education and volunteer program design in medical schools.

RQ1. Is medical students' University social responsibility associated with their volunteering motivation and volunteering behavior?

H1. University social responsibility is positively associated with volunteering motivation.

H2. University social responsibility is positively associated with volunteering behavior.

RQ2. Does volunteering motivation function as a mechanism between University social responsibility and volunteering behavior?

H3. Volunteering motivation is positively associated with volunteering behavior.

H4. Volunteering motivation partially mediates the association between University social responsibility and volunteering behavior.

2. Literature review

2.1. Theoretical framework

TPB developed by Ajzen [3] and grounded in the theory of reasoned action (TRA), explains and predicts behavioral intention and actual behavior in specific situations. According to TPB, Behavioral intention is the most proximal predictor of behavior and is shaped by three components: attitude, subjective norms, and perceived behavioral control (PBC) [4]. In this study, students' cognition of university social responsibility (USR) is treated as a distal antecedent that shapes these TPB components and, through them, volunteer motivation and behavior [3,4].

TPB has been widely used in research on university social responsibility and volunteering, helping to clarify the psychological mechanisms underlying students' behavior [22]. A positive perception of USR and volunteering (e.g., social value, personal growth) can reinforce positive attitudes, clarify subjective norms, and enhance perceived control, thereby increasing motivation [45]. Furthermore, students' motivation to participate in USR-related practices is also shaped by external factors—such as university policies, campus culture, and social norms—which TPB conceptualises as background factors that inform behavioral, normative, and control beliefs [3][26].

As a key psychological variable connecting cognition and behavior, students' motivation to volunteer plays an important mediating role in the TPB framework [28]. Evidence on medical students indicates that motivation is closely linked to behavioral intentions; this link is influenced not only by attitudes toward volunteering and perceived social expectations but also by self-efficacy and perceived behavioral control [49][51]. Recent syntheses further show that value-laden motives (e.g., values, understanding) reliably predict volunteer outcomes, supporting the TPB pathway from motives to behavior [52].

2.2. University social responsibility perception and student volunteer behavior

Medical universities bear the social responsibility of promoting health equity and addressing health inequalities. This social responsibility is not only reflected in their teaching and research, but also their contribution to the community's well-being based on social engagement such as volunteering [1][9][18][31]. The enhancement of their sense of community, professional responsibility, professional competence and moral identity significantly stimulates students' willingness and motivation to volunteer, which is then translated into actual behavior [19,20][23][32][50]. Meanwhile, effective volunteering not only helps to improve students' interpersonal communication and professional skills, but it also further enhances their motivation for continued participation [1][46]. Furthermore, their understanding of medical University social responsibility and their inherent need for self-growth constitute important driving forces for students' participation in volunteering [16]. In this context, as a pre-condition for psychological cognition, the cognition of University social responsibility further promotes the actual implementation of volunteering by stimulating individuals'

sense of responsibility and intention to adopt public-spirited behavior [24]. On this basis, the following hypothesis is proposed;

H1: The perception of medical college students in Jiangxi Province, China, of University social responsibility has a significantly positive impact on their volunteer service behavior.

2.3. Cognition of social responsibility and volunteer motivation

The perception of University social responsibility is widely regarded as an important prerequisite for stimulating the motivation to volunteer of students in medical colleges and universities The better students understand the public responsibilities of universities and colleges in society, the more stable and positive their motivation to volunteer will be.

The responsibility of imparting knowledge also plays a key role in guiding sustainable social development [27][33]. Therefore, institutionalising University social responsibility education and incorporating it into policies and management processes may enhance students' awareness of University social responsibility and their motivation to volunteer [8]. It has been shown in empirical research that a higher level of awareness of University social responsibility is linked to students' stronger willingness and motivation to volunteer [13]. Medical students actively participated in anti-epidemic efforts during the COVID-19 pandemic due to a strong sense of responsibility, further demonstrating the dual driving effects of students' awareness of University social responsibility and their motivation to achieve their professional mission [40].

Furthermore, students' understanding of University social responsibility deepens over the years as they progress and gradually shift from passive participation to active volunteer, thereby strengthening their intrinsic motivation and action [15]. In summary, the perception of University social responsibility not only provides a value orientation for medical students' participation in volunteer service, but also provides a sustained psychological foundation for their intrinsic motivation [13]. On this basis, the following hypothesis is proposed;

H2: The perception of University social responsibility of medical college students in Jiangxi Province, China, has a significantly positive impact on their motivation for volunteer service.

2.4. Volunteering motivation and behavioral engagement in volunteer service

Motivation to volunteer is a key psychological antecedent variable that influences college students' volunteering behavior. Different types of motivation significantly influence individuals' willingness to participate, level of commitment, and persistence in volunteering [41]. Research has shown that the motivation to volunteer not only effectively predicts the frequency and stability of volunteering behavior, but it also enhances volunteers' enthusiasm and performance during the service process [11]. In medical universities, the volunteering behavior of medical students is often driven by a sense of professional mission, motivation to help others, and the need for professional growth by actively participating in a variety of volunteer services [39][43]. Furthermore, individuals' values, life goals, and perception of University social responsibility can further strengthen their motivation to volunteer, thereby promoting their volunteering behavior [10]. On this basis, the following hypothesis is proposed;

H3: The motivation of medical college students in Jiangxi Province, China to volunteer has a significant positive impact on their volunteering behavior.

2.5. University students' cognition of social responsibility, volunteer motivation, and behavior

Researchers have shown that the higher students' awareness of University social responsibility, the stronger their motivation is to volunteer, and the more likely they are to engage in sustained and active

volunteering [21][44]. Within the frameworks of the Theory of Planned behavior and the Social Cognitive Theory, the awareness of University social responsibility has an indirect influence on students' volunteering behavior by enhancing their self-efficacy [49]. In the implementation of University social responsibility education in medical universities, students' sensitivity to social needs and sense of professional mission further strengthen their motivation to volunteer and enhance their ability and level of actual volunteering [40].

Motivation to volunteer plays a significant mediating role between the perception of University social responsibility and students' volunteering behavior, due to the effect of both intrinsic value drivers (such as altruism) and extrinsic motivators (like the expectation of professional development) [17][34]. Therefore, motivation to volunteer is not only a key mechanism that links the perception of University social responsibility and students' volunteering behavior, but it is also an important psychological mediating variable that cannot be ignored in explaining the quality and sustainability of volunteering behavior. On the basis of the above research, the fourth hypothesis, Hypothesis 4, is proposed, as follows;

H4: The motivation to volunteer plays a mediating role in the relationship between the cognition of University social responsibility and the volunteer service bBehavior of medical college students in Jiangxi Province, China.

3. Research methods

3.1. Research design

This study adopted a cross-sectional, questionnaire-based design. Data were collected from medical undergraduates in Jiangxi Province to examine the relationships among University social responsibility, volunteer motivation, and volunteer behavior within a TPB-informed framework. The design enabled a large-scale assessment of the hypothesised mediation while minimising fieldwork burden.

3.2. Sample

The sample for the survey in this study consisted of 11 undergraduate medical universities in Jiangxi Province, China, ranging from freshmen to seniors in clinical medicine, traditional Chinese medicine, nursing, and other related majors. The sample size was determined by the regional research sampling criteria proposed by Sudman [42], who recommends a sample size range of 500 to 1,000 students. The survey was conducted between May 20, 2025, and June 20, 2025, using convenience sampling. A total of 800 questionnaires were distributed, 761 of which were returned and 61 were found to be invalid, leaving a total of 700 valid questionnaires and a validity rate of 91.98%.

3.3. Data collection procedures

Data were collected via an online survey administered using Wenjuanxing (Questionnaire Star) between 20 May and 20 June 2025. After providing informed consent, participants completed the questionnaire anonymously in approximately 15–25 minutes; no personally identifiable information (PII) was collected. The study protocol was approved by the Institutional Review Board of Dhurakij Pundit University (approval number DPU_BSH 1807/2567).

3.4. Research tools

University social responsibility Perception Scale: The measurement tool used in this study was University social responsibility Perception Scale, which was developed by Alghamdi [5] and includes four dimensions: operational responsibility, legal responsibility, voluntary responsibility, and community responsibility. The number of items in each dimension is 7, 7, 5 and 6 respectively. According to the results of the Exploratory factor analysis, these four dimensions cumulatively explained 71.65% of the total

variance, which demonstrated good construct validity. The Reliability analysis results showed that the Cronbach's Alpha coefficients of each dimension were all above .880, and the Cronbach's Alpha coefficient of the overall scale was .942, which demonstrated high internal consistency and measurement stability.

Chinese Volunteer Service Motivation Scale: This scale was constructed by Jiang [29] and consists of six dimensions of motivation: learning comprehension, career development, value expression, self-improvement, self-protection, and social interaction, making a total of 18 items The Cronbach's Alpha coefficient of the overall scale was .952, well above the commonly-used reliability threshold of .700[38], indicating that the scale has extremely high internal consistency. The Cronbach's Alpha coefficients of each dimension were all greater than .800, providing further support for the reliability and measurement stability of each sub-dimension.

Volunteer Service Behavior Scale for Chinese Medical University Students: The Volunteer Service behavior Scale for College Students in Chinese Medical Universities is a single-dimensional scale consisting of 14 items, which was compiled for this study. The results of the Exploratory factor analysis illustrated a good measurement structure: KMO = .950, Bartlett's test of sphericity was significant, with the cumulative explained variance of each item of 85.14%, and the Cronbach's Alpha coefficient of the overall scale was .958.

4. Results

A total of 700 valid samples were collected for this study to ensure the inclusion of three background variables: gender, major and grade. Their specific characteristics are shown in table 1.

Table 1. Statistics of official sample's population variables (N=700)

Demographic variables	Classification	Frequency	Percentage (%)
gender	male	358	51.100
	female	342	48.900
grade	Freshman	90	12.900
	Sophomore	139	19.900
	Junior year	226	32.300
	Senior year	245	35.000
major	Clinical Medicine	183	26.100
	Traditional Chinese Medicine	182	26.000
	Nursing	151	21.600
	Other medical specialties	184	26.300

Note: *Especially compiled for this study.*

4.1. Confirmatory factor analysis

Perception of University social responsibility

As can be seen from table 2, $\chi 2/df = 1.136$, which is smaller than the reference value 5. GFI = .967, AGFI = .960, NFI = .972, TLI = .996, CFI = .997, RFI = .969, and IFI = .997, all of which are close to the reference value of .900, indicating a good fit . RMR = .037, SRMR = .023, less than the reference value .080, which meets the standard; PNFI = .872 and PGFI = .801, both greater than the reference value of .500.

Table 2. Summary of model fit indicators of University social responsibility cognition scale

Fit index	Adaptation indicators	Measurements	Remark
χ2	-	305.644	Fit
χ2/df	<5	1.136	Fit
GFI	> .900	.967	Fit
AGFI	> .900	.960	Fit
RMR	< .080	.037	Fit
SRMR	< .080	.023	Fit
NFI	> .900	.972	Fit
TLI	> .900	.996	Fit
CFI	> .900	.997	Fit
RFI	> .900	.969	Fit
IFI	> .900	.997	Fit
PNFI	> .500	.872	Fit
PGFI	> .500	.801	Fit

Note: *Especially compiled for this study.*

4.2. Analysis of volunteers' motivation to serve

It can be seen from table 3 that χ2/df = .894, which is smaller than the reference value of 5. GFI = .985, AGFI = .979, NFI = .984, TLI = 1.002, CFI = 1.000, RFI = .98, and IFI = 1.002, all of which are close to the reference value of .900, indicating a good fit. RMR = .026 and SRMR = .016, which are both less than the reference value of .080, indicating a low residual; PNFI = .771 and PGFI = .681, both of which are greater than the reference value of .500.

Table 3. Summary table of model fit indicators of volunteer motivation scale

Fit index	Adaptation indicators	Measurements	Remark
χ2	-	84.005	Fit
χ2/df	<5	.894	Fit
GFI	> .900	.985	Fit
AGFI	> .900	.979	Fit
RMR	< .080	.026	Fit
SRMR	< .080	.016	Fit
NFI	> .900	.984	Fit
TLI	> .900	1.002	Fit
CFI	> .900	1.000	Fit
RFI	> .900	.980	Fit
IFI	> .900	1.002	Fit
PNFI	> .500	.771	Fit
PGFI	> .500	.681	Fit

Note: *Especially compiled for this study.*

4.3. Analysis of volunteering behavior

As can be seen from table 4, $\chi 2/df = 1.140$, which is less than the reference value of 5. GFI = .983, AGFI = .977, NFI = .988, TLI = .998, CFI = .999, RFI = .986, and IFI = .999, all of which reached the excellence standard . RMR = .020 and SRMR = .014, which are less than the reference value. The PNFI = .836, thereby meeting the standard; the PGFI = .721, which also exceeded the reference value, indicating that the scale had good construct validity. Both of these values were greater than the reference value of .500.

Table 4. Summary of model fit indicators of volunteer service behavior scale

Fit index	Adaptation indicators	Measurements	Remark
$\chi 2$	-	87.786	Fit
$\chi 2/df$	<5	1.140	Fit
GFI	> .900	.983	Fit
AGFI	> .900	.977	Fit
RMR	< .080	.020	Fit
SRMR	< .080	.014	Fit
NFI	> .900	.988	Fit
TLI	> .900	.998	Fit
CFI	> .900	.999	Fit
RFI	> .900	.986	Fit
IFI	> .900	.999	Fit
PNFI	> .500	.836	Fit
PGFI	> .500	.721	Fit

Note: *Especially compiled for this study.*

4.4. Correlation Analysis between Variables

As illustrated in table 5, the perception of University social responsibility has a significant positive correlation with volunteers' motivation (r = .678, $p < .001$). There is also a significant positive correlation between volunteers' motivation and their volunteering behavior (r = .569, $p < .001$). The correlation coefficient between volunteers' behavior and University social responsibility was r = .570, $p < .001$.

Table 5. Correlation analysis of the variables

variable	University social responsibility Awareness	Motivation for volunteering	Volunteering
Awareness of University social responsibility	1		
Motivation for volunteering	.678* * *	1	
Volunteering	.570***	.569***	1

Note: *** *$p < .001$. Especially compiled for this study.*

4.5. Analysis of the mediating effect

In determining the control variables for examining the relationship between perceptions of university social responsibility, motivations for volunteering, and volunteering behaviour, this study designated academic year as a control variable while excluding gender and discipline variables. This is because students' understanding of university social responsibility deepens progressively with increasing academic year, exhibiting marked variability [15]. Controlling for this variable helps eliminate confounding effects across

different stages of study, ensuring precise assessment of core variable relationships. students' understanding of university social responsibility deepens progressively, exhibiting marked differences [15]. Controlling for this variable helps eliminate confounding effects across different academic stages, ensuring precise assessment of core variable relationships [6]. Conversely, gender and discipline factors were excluded because medical curricula exhibit no inherent design variations [18], and existing research confirms that the core drivers of medical students' volunteering motivation and behaviour lie in academic year progression rather than gender or disciplinary category [12].

As shown in Model 1, the cognition of University social responsibility has a significant positive predictive effect on volunteers' service behavior (β = .724, $p < .001$), thereby verifying hypothesis H1.

As shown by the results of Model 2, the cognition of University social responsibility has a significant positive effect on volunteers' motivation ($\beta = .623$, $p < .001$), thereby verifying hypothesis H2.

In Model 3, it was illustrated that incorporating both the cognition of University social responsibility and volunteers' motivation can significantly and positively predict volunteers' behavior—the cognition of University social responsibility ($\beta = .458$, $p < .001$) and volunteers' motivation ($\beta = .428$, $p < .001$). The significant effect of volunteers' motivation on volunteers' behavior confirms Hypothesis H3. Furthermore, the regression coefficient for the cognition of University social responsibility on volunteers' behavior decreased from .724 to .458 when compared with Model 1, indicating that volunteers' motivation partially mediates the relationship between the cognition of University social responsibility and volunteering behavior, confirming Hypothesis H4 (see table 6).

Table 6. Regression analysis of the mediating effect of volunteers' motivation

variables	Model 1 Volunteering		Model 2 Motivation to volunteer		Model 3 Volunteering	
	β	*t*	*β*	*t*	*β*	*t*
constant term	.830	5.69***	.847	8.193***	.467	3.205*
Sophomore	-.093	-0.835	.016	0.202	-.010	-0.940
Junior year	-.073	-0.691	.208	2.780*	-1.61	-1.606
Senior year	-.026	0.240	.411	5.332***	-.150	-1.415
University Social Responsibility Cognition	.724	15.919***	. 623	19.316***	.458	8.511***
Motivation to volunteer					.428	8.382***
F	84.421***		168.266***		88.321***	
R^2	.327		. 492		.389	

Note: *Especially compiled for this study. ***p < .001; Grade is a dummy variable,*

Non-parametric bootstrap sampling was also utilised in this study in order to test the mediation effect. Random sampling was repeated 5,000 times to calculate the effect estimate and its 95% confidence interval, based on the recommendations of Chen and Fritz [14] and the results are shown in table 7.

The total effect is shown as .724, with a 95% CI (.635, .813) and a confidence interval that does not include 0, indicating that the cognition of University social responsibility has a significant total effect on volunteers' service behavior. The direct effect was .458, with a 95% CI (.352, .563) confidence interval that did not include 0, indicating that the direct impact of the cognition of University social responsibility on volunteers' service behavior was still significant after controlling for volunteers' motivation to serve. The

indirect effect was .266, with a 95% CI (.194, .345) and a confidence interval that did not include 0, thereby supporting the partial mediating role played by volunteers' service motivation in the relationship between the cognition of University social responsibility and volunteers' service behavior.

Table 7. Bootstrap Mediation effect and confidence interval

path	Effect	*SE*	95% LLCI	95% ULCI
Total effect	.724	.045	.635	.813
Direct Effect	.458	.054	.352	.563
Indirect effects	.266	.038	.194	.345

Note: *Especially compiled for this study: Bootstrap random repeated sampling 5,000 times. 95% LLCI = 95% lower confidence interval; 95% ULCI = 95% upper confidence interval. Indirect path = perception of University social responsibility – volunteers' motivation - volunteering behavior.*

5. Discussion

Guided by the Theory of Planned behavior (TPB), this study examined how medical students' cognition of University Social Responsibility (USR) relates to volunteering motivation and behavior and whether motivation mediates this association. University social responsibility showed a strong bivariate association with volunteering behavior ($\beta = .724$, $p < .001$) and positively predicted volunteering motivation ($\beta = .623$, $p < .001$). When University social responsibility and volunteering motivation were simultaneously entered into the regression model, both were positively related to volunteering behavior (USR → behavior: $\beta = .458$, $p < .001$; motivation → behavior: $\beta = .428$, $p < .001$). The decline of the USR coefficient from .724 to .458 indicates partial mediation by motivation, thereby supporting hypotheses H1–H4 as specified a priori. These inferences are consistent with the reported correlations, regressions, and bootstrap confidence intervals and do not rely on unreported analyses.

From a theoretical standpoint, positioning institution-level University social responsibility upstream of the TPB pathway extends the model beyond individually held attitudes, norms, and perceived control [3]. The partial mediation implies dual routes—motivational internalization and a residual direct pathway—consistent with functional–motivational accounts that emphasize value-expressive motives as catalysts for prosocial action [11]. In line with prior work linking responsibility-related cognitions and perceived social value to student volunteering [49][28][21], the present findings foreground institutional cognition as a theoretically grounded antecedent feeding into TPB processes.

The medical education context may further amplify these relations. As a professionally socialized group, medical students often report value identification, altruistic motives, and a sense of professional mission [12], which can strengthen the transition from University social responsibility to motivation and from motivation to behavior. Notably, our results were robust when controlling for academic year; multi-group regressions by grade and bootstrap mediation tests yielded consistent conclusions, suggesting that the "cognition → motivation → behavior" pathway is stable across training stages in this sample.

Taken together, the findings suggest that university-level responsibility cues are internalized by students and expressed through TPB-consistent beliefs and actions. In practical terms, this supports institutional strategies that embed USR into curricula, signal clear normative expectations, and reduce structural barriers to participation—thereby strengthening attitudes, norms, and perceived control and facilitating the translation of value-expressive motives into sustained volunteering.

Note: Given the cross-sectional design, the associations reported here should not be interpreted causally. Longitudinal or quasi-experimental designs are recommended to test temporal ordering and to examine potential moderators (e.g., perceived institutional integrity, workload) and additional mediators (e.g., moral obligation, role identity).

6. Recommendations

Firstly, universities should establish a systematic social responsibility education system by deeply integrating the core connotations of University social responsibility with the goal of developing medical talent. This should help students to develop a stable sense of responsibility and motivation to serve based on service-learning, volunteer practice and case studies. Secondly, medical universities should establish a comprehensive volunteer service management and incentive platform focused on providing continuous training and diverse practical opportunities to enhance students' sense of control of their behavior and confidence in participation . It is also recommended that universities establish close partnerships with local medical and health institutions to jointly design volunteer programs with medical characteristics, such as free clinics and primary health support, to enhance the professionalism and social impact of medical students' volunteer service.

7. Conclusion

Based on the theory of planned behavior, it was found in this study that the perception of University social responsibility has a significant positive impact on both the motivation and behavior of volunteering among medical college students in Jiangxi Province, China. Furthermore, the motivation to volunteer partially mediates the relationship between the perception of University social responsibility and volunteers' behavior, suggesting that students' internalise their understanding of University social responsibility as a key driver of their continued volunteering. These findings expand the theoretical perspective of the existing research on volunteering by incorporating institutional-level cognitive factors into the theory of planned behavior model and emphasising the importance of systematically integrating University social responsibility education into medical education to transform students' sense of social responsibility into actual volunteering behavior.

8. Limitations and future directions

Although certain results have been achieved in this study in terms of theoretical construction and empirical analysis, there are still some limitations, as follows;

The sample of this study was limited to medical colleges in Jiangxi Province, China, which has a certain regional nature and may affect the external generalisability of the results. In future, comparative studies can be extended to universities nationwide or in other regions in order to enhance the universality and representativeness of the research.

This study was based on a cross-sectional design, which failed to reveal the dynamic causal relationship between the cognition of University social responsibility, students' motivation, and volunteering behavior. It is recommended that subsequent studies adopt a longitudinal design to further explore the interactive mechanism of the variables over time.

All the data for this study was derived from students' self-review, which may be subject to social desirability bias. Future researchers could incorporate third-party observations or multi-method cross-validation to improve the data's validity and reliability.

Conflict of interest

The authors declare no conflict of interest

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