

University Students' Internet Addiction and Cyberstalking: A Moderating Model of Psychological Resilience

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ABSTRACT

Aim of the Study: This study aims to investigate the relationship between internet addiction and cyberstalking by keeping moderating role of psychological resilience among university students of Lahore, Pakistan.

Methodology: The survey method was used to collect the data from 557 respondents by using Item Respondent Theory with standardized adopted instrument of internet addiction, cyberstalking and psychological resilience. Social Learning and self-control theories were conducted to check the higher resilience may be more resistant to effects of excessive internet use among university students.

Findings: The following results suggested that there is significant relationship between internet addiction and cyberstalking among university students. For moderation, "process macro" represented as Model 1 of Andrew Hayes was used to check moderating role of psychological resilience with its five dimensions resulting as Personal Competence has highest moderation effect ($F=40.308$), Social Competence ($F=35.29$), Family Coherence ($F=35.90$), Social support ($F=37.6$) and Personal Structure ($F=37.6$). F values was near or above 25, this indicated significant moderation of psychological resilience.

Conclusion: The research concluded the direct proportional relationship between internet addiction and cyberstalking. There is a significant increase of cyberstalking if there is already existing internet addiction. Psychological resilience significantly moderates the relationship of internet addiction and cyberstalking.

Keywords: Cyberstalking, Internet Addiction, Psychological Resilience, Gender Role, Students.

Introduction

In recent years, the internet has become an integral part of our daily lives offering unprecedented opportunities, socialization and entertainment. When a new technology gets a boom, the obsession and

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new disorders follows society and it becomes inevitable to learn about them to pretend crimes that they might encourage against humanity (Navarro et al., 2016). Internet addiction is well explained by Young, (2009) as any other addiction which isolates user and results in neglect of duty with lost control. With the increasing prevalence of online learning, virtual social interactions, and easy access to a plethora of online distractions, students can easily fall into the trap of spending excessive amounts of time online, neglecting their academic responsibilities, and compromising their mental health by involving into cybercrimes (Mahmood et al., 2020).

Online activities like cyberstalking has become a pervasive issue in the digital age, characterized by the persistent harassment, intimidation, and stalking of individuals through online channels. Furthermore, Cyberstalking can have severe consequences on a student's academic performance, mental well-being, and overall sense of safety (Dreßing, 2014). Cyberstalking is a harassment and (Isabella Santos, 2021) finds the relationship between the victim and harasser. The victim is either someone harasser knows online or acquainted with him/her in real life. It could be anyone known or unknown but harasser must have a desire to persecute victim and platform should be online (Alam, 2022). There are two types of stalking, one is intentional and the other is unintentional. Unintentional cyberstalking happens when an individual has blur understanding invention of privacy (Lowry, 2019). Dreßing (2014) suggests not all contacts made on social media are cyberstalking. There should be an element of fear in it for example if a person contacts someone multiple times on any social media platform for selling or advertising purposes it cannot be taken as cyberstalking.

However, a protector indicator exists in the relationship with psychological resilience. By definition, psychological resilience is a concept that refers to an individual's ability to adapt, cope, and recover from adversity, trauma, or significant life stressors. Psychological resilience is multilevel approach which stops one before surrendering itself to harmful levels of addiction. There is an established relation between internet addiction and cyberstalking of adolescents and research proved it to be directly proportional by North Carolina authorities (Navarro et al., 2016).

While the internet offers numerous advantages, it also presents significant challenges, such as internet addiction and cyberstalking, which can have detrimental effects on the well-being of students. However, an important factor that can potentially influence the impact of these issues is psychological resilience, the ability to adapt and cope with adversity. Understanding the moderating effect of psychological resilience in the context of internet addiction and cyberstalking among university students is crucial for developing effective interventions and support systems (Alam et al., 2014).

Statement of the Problem

Internet addiction is beyond control desire of a person to continuing consumption of internet (Young, 2009). It leads to multiple cybercrimes, according to Alam et al., (2014) they usually revolve around someone's desires while Navarro et al., (2016) provides evidence that cyberstalking is one of them. Developing countries are more dependent to ideal online life according to Poushter et al., (2018) and Pakistan is one of developing countries and with rapid growth of internet users each year. Internet users are increasing, number off hours spend on internet are increasing and internet related crimes are also increasing in Pakistan. Therefore, the problem addressed in this study is to investigate the moderating effect of psychological resilience on the relationship between internet addiction, cyberstalking in university students.

Significance of the Study

This study enhanced our knowledge about cyberstalking and its relationship with internet addiction. This study helped to understand us better about cybercrime of cyberstalking with a better understanding of crime and criminal with gender roles. This study also helped us to understand if cyberstalking is triggered by internet addiction. This current research discovered the understanding of cyberstalking of Pakistani students and their need to know about their interested someone. In 2016, Pakistan added the law to punish

cyber stalkers, but unfortunately the reasons behind acts which are gathered as cyberstalking haven't been studied. Khalid Zafar, an advocate of Lahore by explaining cyberstalking laws emphasis upon the need of reasons to trigger act (Khalid Zafar, 2022).

Objective of the Study

1. To investigate the impact of Internet Addiction on Cyberstalking of university students in Lahore.
2. To investigate the moderating role of psychological resilience on relationship between internet addiction and cyberstalking of university students.

Literature Review

Internet Addiction and Cyberstalking

Psychological disturbances continued to add up caused by Internet Addiction as Greenfield in his early studies on the topic of internet addiction that people who get addicted to being online tend to feel a sense of displacement when they are not online and are also unable to manage the basic aspects of their lives because of the increasing obsession with online use (Greenfield D., 1999). Stanford Institute for the Quantitative Study of Society, the researchers discover that internet usage could lead the user to be lonely, and subsequently, their social engagement is also reduced (Nie & Erbring, 2000). Young (1998) found that being isolated is directly associated with the out-of-hand use of the internet in almost fifty-six percent of the 396 individuals she had studied about online addiction.

The findings of the growing literature shown that online and virtual relationships, more specifically online affairs, can be the major cause that can lead to marital discord, separation, and a very possible divorce among the couples (Young, et al., 2000). Individuals that are suffering from pornography addiction, sex chat rooms, or are having an online affair show changes in sexual behavior in their personal lives (Cooper, et al., 1999). In many cases, individuals who are addicted to the use of the internet were using online sex chat rooms or online pornography to replace it with their sexual intimate life with their offline partners and with time showed a complete withdrawal from real life and were using the internet and the computer to fulfill their sexual desires and needs (Schneider, 2000).

As much as excessive use of internet it is also bringing forth cyberstalking as a modern issue of this day and age. It is a much easier crime as compared to traditional stalking which requires extensive physical acts of stalking while cyberstalking allows the perpetrator to harass other individuals using social media networking sites without leaving the comfort of their homes (Wang, et al., 2013). Information that cybers stalkers can gather online about their victims is used by them to intimidate or threaten them online they will go as far as sending pretentious and unwanted emails or personal messages (Baum, et al., 2009).

It has found that relationships of Cyber stalkers tend to be more erratic with different individuals, cyber stalkers, themselves are typically those individuals who are most likely to be isolated from society, they are more socially awkward, and have narcissistic tendencies (Spitzberg & Cupach, 2003). Cyber stalkers tend to not have a social understanding of their environments and the impact they could have on a relationship. The cyber stalker tended to manipulate their victims by being coercive and exploitative towards their victims. There is quite a variety of methods of cyberstalking that cyber stalkers use to victimize individuals online on social networking sites (Nguyen, 2020).

Being online and leisurely scrolling through the internet is one activity that most individuals partake in as a part of their daily routines resulting in mindlessly scrolling over various social networking sites and with the rise and popularity of various social media platforms and due to the common and increasing use of social networking sites in an individual's life, a new form of stalking has been birthed known as cyberstalking as more and more individuals are building their online presence and the stark difference between cyberstalking and traditional stalking is that it can be done virtually anywhere in the world (Putnam & Maheu, 2000).

Social media users are putting an insane amount of their time and effort into building a likable social media presence and they care more about how they are perceived online which in turn is becoming a major cause in completely neglecting the effort required to build their presence offline and the effort to sustain their real-life relationships. This obsession with an online presence and the deteriorating offline relationships of an individual can cause a stronger and unhealthy attachment towards the individuals they have come across and are in contact with online despite never meeting them in their real lives (O'Keeffe & Clarke-Pearson, 2011). This can lead them to post more about their personal lives often on social networking sites making it much easy for other individuals in the same online space to learn about each other quickly despite not meeting them in real life (Velden & El Emam, 2013).

Conclusively, evidence from previous studies has stated that cyber stalkers tend to show addictive personality traits such as salience and mood modification with having a plethora of other mental disorders and are introverted individuals, are withdrawn from society and have a difficult time expressing themselves to other individuals. And with the technological aspect and their access to it along with the social aspect, technological addiction could quickly lead an individual to excessive, addictive, and/or compulsive behaviors in the shape of cyberstalking of other individuals online (Navarro, et al., 2016).

H1: There is a significant relationship between Internet Addiction and Cyberstalking.

Moderation Role of Psychological Resilience among Relationship between Internet Addiction and Cyberstalking

Resilience is labelled active in the absence of stress, anxiety and depression therefor it prevents the addiction of any sort as well (Allison S. Troy, 2023). Resilience is adversely related to complicated phone usage which includes being victim to online hate and getting addictive to smart gadgets. A study conducted on 834 Chinese undergraduate by (Zejun Hao, 2023) who completed a questionnaire to measure resilience and levels of problematic smartphone use, resilience directly and indirectly significantly mitigated the effects of smartphone addiction. and students stick to positive use. Resilience helps to recover from being victim of cyberstalking concluded by researcher (Blazey, 2021) in which his empirical research has qualitatively explored how resilience is experienced and he measured resilience in form of personal competence, social competence, family coherence, social support and personal structure as mechanism providing recovery.

Resilience is a construct and it is studied as individual concept as well (Friborg, 2003) divided resilience into personal competence, social competence, family coherence, social support and personal structure. There are few studies around the globe which provide sufficient evidence that resilience moderates the relationship of internet addiction and problems raised by it. In a study conducted by Seoul, the authors tested the underlying mechanism of game addiction with the aid of testing a moderated mediation model, wherein inter-personal competence moderated the mediation version of loneliness, regulatory awareness and online game dependency. The results showed inter-personal competence significantly defended the indirect effect of loneliness (through regulatory focus) on online game addiction (Ji-yeon Lee, 2019). Another study conducted on 166 Turkish adolescences via survey shows the adolescents spending time with their mothers and peers had a higher level of perceived social support and family support and a lower level of internet addiction (Selim Gunuc, 2013).

Similarly, nursing students to find the influence on self-awareness and personal structure on phone and internet addiction by Shinsung department of nursing concluded these factors of resilience construct have great influence on addiction. The results were shown using one-way ANOVA and inter-personal relation competence ($\beta = -.18$, $p < .001$) had significant influences on Internet addiction (Son, 2018).

H2: Psychological resilience significantly moderates the relationship between internet addiction and cyberstalking.

Theoretical Framework

Social learning theory postulated that human beings are social animals and they all hold the need and the desire to interact with other human beings, which sometimes can lead to negative behaviors, especially when the reward for set negative behaviors outcomes consequences in the individual's mind. Individuals then tend to make the connection of reward with the negative behavior and it will increase their likelihood to commit to that same behavior e.g., cyberstalking, cyberbullying other individuals (Akers, 1985). Social learning theory proposed by Albert Bandura in 1977, in the context of internet addiction, students may observe their peers or influential figures engaging in excessive internet use, which can reinforce and normalize this behavior. Individuals can develop addictive patterns more easily due to the availability of online platforms and constant exposure to digital stimuli. Students may engage in excessive internet use for escapism, socialization, or validation. In this regard, Students who witness or are victims of cyberstalking may internalize these behaviors and see them as acceptable or effective methods of exerting control or intimidation online.

Similarly, the Self-Control Theory can help explain the occurrence of cyberstalking among university students. Individuals with low self-control may exhibit impulsive and aggressive tendencies, seeking power, control, or attention through intrusive online behaviors. Individuals who lack self-control might gain satisfaction or control in online stalking, permitting them to exert influence or intimidate other people in the virtual world. In addition, psychological resilience may minimize the impact of cyberstalking among university students. Individuals who are resilient are better able to manage their emotions, seek help, and engage in problem-solving.

Materials and Methods

Participants

This study involves surveying the current users of Internet especially social media platforms who spend a large amount of time online and they are expose to learning from internet by using explanatory causal study. The sample size is responsible for the quality of data and its generalizability. With the help of a ratio of 10:1 as suggested by Kline (2011), the sample size for this study will be taken from the total number of questionnaires used in the items. Therefore, total number of items are 78 and 78x10 satisfied the requirement (Landis, 2013).

Instrument and Measures

The data collection tool of the prevailing studies was a standardized questionnaire. The instrument used in this research first takes the demographic data from the participant with records along with the gender of the respondent, age of the respondent, and education degree. The scale of cyberstalking was adapted from research published by Isabella Santos. In a study conducted by (Isabella Leandra, 2021), she develops a scale considering gender, FOMO and social media use to gather data on cyberstalking. This scale consists of 10 items and based upon the 5-point Likert scale (1, 2, 3, 4 or 5), where 1 = Rarely, 2 = Occasionally, 3 = Frequently, 4 = Often and 5 = Always.

The scale for measuring psychological resilience was adopted from (Friborg, 2003) where they developed scale of 43 items. This tool calculates five dimensions of psychological resilience. (Friborg, 2003) divided resilience into personal competence, social competence, family coherence, social support and personal structure measured on the 5-point Likert scale (1, 2, 3, 4 or 5), where 1 = Rarely, 2 = Occasionally, 3 = Frequently, 4 = Often and 5 = Always.

Results

Table 1: *Demographics of Respondents.*

	Demographic Items	Frequency	Percentage
1.	Gender		
	Male	235	43.1%
	Female	311	56.9%
2.	Age		
	18-21	55	10.1
	22-25	351	64.2
	26-29	117	21.4
	30-33	18	3.3
	34 or above	6	1.1
3.	Education Level		
	Intermediate	63	11.5%
	BS	366	66.9%
	Masters	72	13.2%
	M.Phil.	39	7.1%
	PHD	7	1.3%
4.	University Sector		
	Private	172	31.4%
	Public	374	68.4%

Kaiser Mayer Olkin Test

Table 2: *The primary test for capability of factor analysis is Kaiser Mayer Olkin (KMO) test.*

Constructs	KMO Index	Goodness of Fit Significance Value
Internet Addiction	.847	.000
Cyberstalking	.707	.000
Psychological Resilience	.816	.000

The value closer to 1 shows data is more significant for analysis, the KMO index for Internet Addiction, Cyberstalking and Psychological Resilience were 0.847, 0.707 and 0.816 respectively which implies data is significant for analysis.

Table 3: Cronbach's Alpha test was conducted in order to guarantee scale.

Constructs	Cronbach's Alpha	N of Items
Internet Addiction	.740	20
Cyberstalking	.471	10
Psychological Resilience	.681	43

The results are summarized in Table 3 and depict internal item consistency for each of the constructs. Correlation Analysis was conducted to check relationship between variables.

Table 4: *Pearson/Spearman coefficient to calculate Bivariate correlation.*

	Internet Addiction	Cyberstalking	Psychological Resilience
Internet Addiction	---	.395**	.390**
Cyberstalking	.395**	---	.242**

Psychological Resilience	.390**	.242**	---
N	557	557	557
Mean	3.2358	3.5316	3.2693
Std. Deviation	.44354	.59334	.28358

Variables are related to each other are being measured through correlation in SPSS. Using Pearson/Spearman coefficient to calculate Bivariate correlation gives the value between -1 and +1. If the value is '+1' between two variables, it indicates that the variables are positively correlated.

Regression Analysis

In order to judge the direct effect of Psychological Resilience on Internet Addiction and Cyberstalking, a hierarchical regression was conducted. Implementing hierarchical regression analysis helped estimating the both the 'Basic Models'. The Table below is an illustration of regression analysis conducted in the form of two basic models. The results of analysis show that for Basic Model 1, independent or the predictor variable i.e. Internet Addiction has a significant direct effect on the dependent or criterion variable i.e. Cyberstalking ($\beta=0.529$, $p\text{-value}=0.000 < 0.01$). When the value coefficient of determination, R square somewhat increases, the statistical significance of model fit also increases. In Basic Model 2, independent variable internet addiction has a significant direct effect on the dependent variable cyberstalking ($\beta=0.475$, $p\text{-value}=0.000 < 0.01$). Both the models are statistically significant with $F(1, 100)$, $p < 0.05$. Since there exists a statistical significance between variables of the model fit for both Basic Model 1 and Basic Model 2, hence process moderation analyses can be conducted (Hayes, 2017).

Table 5: *Direct and Interaction Effects for Independent Variable*

Independent Variable	Basic Model 1	Interaction Model 1
R	.395	.407
Adjusted R ²	.155	.162
ΔR^2	.156	.165
T	10.58	8.341
B	.529	.475
F	100.89	53.88
P	0.00	0.00

Moderation Analysis using Andrew Hayes Process

Process "macro" of Andrew Hayes calculated moderation in SPSS by applying formulas. Moderator is a variable that specifies the extent of the influence of an independent variable on the dependent variable. Principally, it implies the interaction term which is used to change the magnitude of the relationship between two variables. An extension named "Andrew Hayes Process" was used to assess the effect of moderating variable i.e., perceived psychological resilience between internet addiction and cyberstalking.

Table 6: *Interaction Model*

Independent Variable	Interaction 1 (Personal Competence)		Interaction 2 (Social Competence)		Interaction 3 (Family Coherence)		Interaction 4 (Social Support)		Interaction 5 (Personal Structure)	
	B	T	B	T	B	T	B	T	B	T
<i>Intercept (α)</i>	.747	.947	1.177	1.345	3.25	2.74	1.956	3.653	1.66	2.47
<i>X (β_1)</i>	1.078	4.178	.583	1.177	.258	.596	.5221	2.853	.711	3.35
<i>Z (β_2)</i>	.3375	1.608	.173	.782	-.381	-1.22	-.028	-.213	.078	.378
<i>X_x_Z (β_3)</i>	-.179	-2.50	-.016	-.210	.760	.7408	-.002	-.049	-.076	-1.13
<i>R²</i>	.1821		.163		.165		.157		.172	

<i>Adjusted R2</i>	<i>.429</i>	<i>.404</i>	<i>.406</i>	<i>.396</i>	<i>.415</i>
<i>F</i>	<i>40.308</i>	<i>35.29</i>	<i>35.90</i>	<i>33.79</i>	<i>37.6</i>

Table above shows interaction of each dimension as moderation between internet addiction and cyberstalking. Personal Competence has highest moderation effect (F= 40.308) while Social Competence (F=35.29), Family Coherence (F=35.90), Social support (F=37.6) and Personal Structure (F=37.6), F values in social studies above 25 are considered valid, and values near 40 or above are consider strongly valid.

Table 7: *Moderating Effects*

Moderating Effect	R	F	LLCI	ULCI	P
<i>Internet Addiction -Cyberstalking -> Personal Competence</i>	.426	40.308	-.3205	2.298	.000
<i>Internet Addiction -Cyberstalking -> Social Competence</i>	.404	35.29	-.165	.133	.000
<i>Internet Addiction -Cyberstalking -> Family Coherence</i>	.406	35.90	-.1255	.227	.000
<i>Internet Addiction -Cyberstalking -> Social Support</i>	.415	37.64	-.209	.056	.000
<i>Internet Addiction -Cyberstalking -> Personal Structure</i>	.415	34.61	-.201	.061	.000

Discussion

There is an established relation between internet addiction and cyberstalking of adolescents and research proved it to be directly proportional by North Carolina authorities (Navarro et al., 2016). This research also tries to gather how psychological resilience significantly moderates the relationship between internet addiction and cyberstalking and how gender role significantly mediates the relationship between internet addiction and cyberstalking. The philosophical technique of the present research is ‘post-positivistic’. The present study utilized the deductive approach as the main method for conducting research, this strategy involves carefully testing the hypotheses.

In theoretical framework, according to social learning theory by Albert Bandura an individual spends most of his time on internet and observe, model, and imitate the behaviors of others, attitudes, and emotional reactions of other individuals from online platforms also practice his/her learning on their own relationships. The act of cyberstalking can be a learnt behavior from internet and person who are identified as internet addictive lends to have more chances of getting involved in cyberstalking (Dreßing, 2014). Meanwhile Self-control theory by Travis Hirschi and Michael Gottfredson support psychological resilience as a force by stating ‘self-control acts’ as a positive force to drive anyone off the crime. All the factors of psychological resilience are forces that make a person sufficient, satisfied and in gratitude which eventually drives off crimes like cyberstalking (Blazey, 2021).

The hypothesis, one there is a significant relationship between internet addiction and cyberstalking. Secondly, psychological resilience significantly moderates the relationship between internet addiction and cyberstalking. Here, Psychological resilience have five dimensions and we formed five sub hypothesis that each dimension will have an impact on relationship of internet addiction and cyberstalking. Thirdly, gender role significantly mediates the relationship between internet addiction and cyberstalking. The research method for the present study was quantitative analysis. Data for the prevailing research was collected with the assist of a survey. Survey consists of 77 items. The survey was adapted from four different researches. Internet addiction had 20 items developed by (Siste, 2021), cyberstalking had 10 items developed by (Isabella Leandra Silva Santos, 2021), psychological resilience had 43 items developed by (Friborg, 2003) while gender had 4 adapted from (Lim, 2002).

The total number of gathered responses from the universities included 557 questionnaires and findings on the demographics section showed that among the 557 respondents the 235 (43.1%) were males and 311 (56.9%) were females. Highest percentage of these respondents age wise existed in 22-25 and the education level of our 66.9% respondents are Bachelors. The primary test for capability of factor analysis is Kaiser Mayer Olkin (KMO) test was conducted and results implies data is significant for analysis. For reliability, Cronbach's Alpha test was conducted in order to guarantee scale. The results of reliability coefficients for all variables summarized internal item consistency for each of the constructs. The results clearly indicate direct positive relation between internet addiction and cyberstalking just like study conducted North Carolina's authorities to studied the behavior of juvenile and find relationship between internet addiction and cyberstalking (Jordana N. Navarro, 2016). Thus, this investigation was done to first discover weather relationship between internet addiction and cyberstalking exists which is also first hypothesis of this study.

Variables are related to each other are being measured through correlation in SPSS as Internet Addiction, cyberstalking and psychological resilience are the three variables used in the research. After running correlation test it is concluded that variables exhibit a positive correlation with each other. Internet addiction and cyberstalking have the highest correlation. There exists a positive correlation between psychological resilience and internet addiction and strong correlation between cyberstalking and psychological resilience.

R-Square in a basic model or linear model shows the amount of effect of independent variable on dependent variable. Here, results showed significant regression between internet addiction and cyberstalking. An extension named "Andrew Hayes Process" was used to assess the effect of moderating variable i.e., psychological resilience between internet addiction and cyberstalking. Psychological resilience tool consisted of five dimensions with personal competence, social competence, family competency, social support and personal structure. Each dimension was run separately in Andrew Haye process which showed results of analysis show that for Basic Model 1. When the value coefficient of determination, R square somewhat increases, the statistical significance of model fit also increases. F values in social studies above 25 are considered valid, and values near 40 or above are consider strongly valid and all five dimensions have coefficient value above 25.

This study is first to examine psychological resilience as moderating variable between internet addiction and cyberstalking. Previously there is a study conducted by Catherine D. Marcum in USA which shows the low self-esteem to be moderator which strengthen the relationship of internet addiction and cyberstalking and argues the need of resilience (Catherine D. Marcum, 2016).

Conclusion

Since the boom of internet, everything has transformed online. This also includes relationships and desire to be appreciated online on every social platform. With the increased use of internet platforms, there is increased risk of crimes that can be executed online. This study investigated the influence of internet addiction using psychological resilience as moderating variable on cyberstalking in Pakistani context. This research concludes the direct proportional relationship between internet addiction and cyberstalking. There is a significant increase of cyberstalking if there is already existing internet addiction. Psychological resilience significantly moderates the relationship of internet addiction and cyberstalking.

Limitations & Future Recommendation

Findings of this study should only be viewed considering its limitations. The most prominent limitation of the present study was the use of convenience sampling as whole data is collected from one city. Therefore, the findings deduced from this thesis cannot be generalized to the general population of Pakistan. The lack of literature about cyberstalking in the context of Pakistan was another limitation of the study. As recommendation for further studies on cyberstalking in Pakistan, different regions of country need to be explored as Lahore has very different cultural values from rest of cities.

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Conflict of Interest

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