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## **Medical Mistrust, HIV-Related Conspiracy Beliefs, and the Need for Cognitive Closure among Urban-Residing African American Women: An Exploratory Study**

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### **ABSTRACT**

Despite advances regarding access to care and overall treatment, medical mistrust remains an important factor regarding clinical research participation as well as prevention/treatment-seeking behaviors among African American women. Such attitudes may be a result of psychosocial variables such as HIV-related conspiracy endorsement as well as a need for cognitive closure (NFCC) that reinforces their beliefs of interpersonal and institutional discrimination. To explore how well these psychosocial factors predict medical mistrust, thirty-five urban-residing African American women completed a demographics survey, the Medical Mistrust Index (MMI), a HIV-related conspiracy beliefs survey, and the Need for Closure Scale (NFCS). Results showed that the overall model of age, HIV-related conspiracy beliefs, and NFCC accounted for 25.9% of variance in medical mistrust among participants. This suggests that medical mistrust among African American women may stem from the need to have clinical and health-related expectations in-line with historical and personal experiences of prejudice and mistreatment in order to avoid similar situations. Future studies should examine this dynamic within a larger population to determine possible strategies for addressing factors concerning medical mistrust among African American women and subsequently reduce persistent health disparities such as HIV.

**Keywords:** African American women, need for cognitive closure, HIV-related conspiracy beliefs, medical mistrust, health disparities

## INTRODUCTION

There has been both a clear and consistent history of health disparities between African Americans and other ethnicities—particularly Whites (Williams & Sternthal, 2010). Historically, such disparities were attributed to such factors as racial inferiority, healthcare and socioeconomic status (Williams, Mohammed, Leavell, & Collins, 2010). However, beliefs in institutional discrimination and increased levels of mistrust regarding healthcare organizations and providers may also serve as a partial explanation for health disparities concerning the African American community as a whole (Ball, Lawson, & Alim, 2013) as well as account for the lack of minority representation in clinical research studies and in treatment-seeking behavior (Armstrong, Crum, Rieger, Bennett, & Edwards, 1999).

Due to the complex relationship between African Americans and healthcare institutions, perceptions of racism and mistrust continue to exist. Thus, the past experiences and expectations of racially biased conduct in the medical community fuels the distrustful attitudes among African Americans (Hammond, 2010; Ritchie et al, 2017). Consequently, such attitudes and perceptions have significant implications. For example, African Americans living with HIV are more likely to express high levels of medical mistrust and are less likely to adhere to treatment when compared to other racial/ethnic groups (Bogart et al., 2016). In addition, 41.7% of African Americans believed they could not trust their physician to thoroughly explain research participation as compared to only 23.4% of Whites, in addition to, a greater belief that their physicians administered treatment as part of a study without their consent (24.5% versus 8.3%) (Corbie-Smith, 2002). Regarding African American women specifically, those with higher medical mistrust are less likely to utilize at-risk counseling and testing engagements after accounting for socio-demographic and self-efficacy factors (Sheppard, Mays, LaVeisst, & Tercyak, 2013). These obstacles may be a consequence of medical mistrust (Hammond, 2010) and perpetuate health disparities. Trust models suggest an accumulation of negative interactions disrupt an individual's sense of psychological safety (Edmondson, 2004). Subsequently, a disturbance of psychological safety may lead African Americans to expect negative interactions in the future. Therefore, their mistrust in healthcare institutions may have adverse effects on their willingness to seek care and participate in clinical research.

### HIV-Related Conspiracy Beliefs

Many Americans subscribe to health-related conspiracy theories, with less educated, poorer and members of minority groups more likely to endorse them (Freeman & Bentall, 2017). Certain aspects of African Americans' perceptions and attitudes towards healthcare organizations and HIV/AIDS are seen by some as conspiracy theories. Conspiracy beliefs have profound importance in a society where conspiracy accounts are implicated in interpretations of important events (Leman & Cinnirella, 2007). Studies have shown that such beliefs in conspiracy theories are a result of cultural and medical mistrust due to years of societal and institutional discrimination (Bird & Bogart, 2005; Ford, Wallace, Newman, Lee, & Cunningham, 2013). Furthermore, conspiracy beliefs are associated with mistrust of institutions (Bird & Bogart, 2005; Ross, Essien, & Torres, 2006), and can influence individual's health behaviors and decision to pursue health care (Oliver & Wood, 2014). Researchers believe that conspiracy theories relate to broader social and intergroup conflicts where they are used in instances surrounding lack of control and psychological empowerment (Bruder, Haffke, Neave, Nouripanah, & Imhoff, 2013) or to attribute blame to an unjust social system (Crocker, Luhtanen, Broadnax, & Blaine, 1999). Additionally,

feelings of helplessness regarding producing change as well as insignificance within a society have also been associated with high levels of beliefs in conspiracy theories (Bruder, Haffke, Neave, Nouripanah, & Imhoff, 2013). Conversely, strong African American identity has been linked to greater belief in health-related conspiracies, possibly because a stronger sense of identity may be linked to greater knowledge of its culture and history with respect to racism in the US (Lehman & Cinnirella, 2013). Thus, mistrust is believed to stem from continued prejudices, racism, and unfair treatment both in the health care system and society in general.

However, it is important to note that health-related conspiracy beliefs including HIV/AIDS among many African Americans are not unfounded. There are many documented instances of systematic abuse of African Americans in the clinical and research setting (*see* Washington, 2006). For example, Washington (2006) notes the extensive history of medical experimentation, exploit, and abuse spanning more than four centuries including research on radiation experiments as well as the eugenic control of African American reproduction. Beyond the widely recognized Tuskegee syphilis study, the extent of deception and mistreatment from the medical community serves as a significant factor of mistrust and conspiracy beliefs among many African Americans.

One of the most prevalent conspiracy beliefs among African American women is regarding the origin of HIV and the role of the government in the AIDS epidemic, with higher beliefs than their Latino, non-Hispanic, and Asian racial/ethnic counterparts (Ross, Essien, & Torres, 2006). Additional studies conducted in the African American community also revealed various forms of misinformation concerning HIV/AIDS. For example, Klonoff and Landrine (1999) found that 27% of African Americans endorsed the belief that “HIV/AIDS is a man-made virus that the federal government made to kill and wipe out Black people.” Bogart and Thorburn (2005) found that over 20% of African American women believed that AIDS was produced in a government laboratory. Newman, Duan, Rudy, Roberts, and Swendeman (2004) also showed that conspiracy beliefs may be extensive and reflect significant mistrust of the government and health care system among African Americans. In their study, approximately 50% of African Americans reported that they believed the government secretly had an HIV vaccine. Given the significant percentage of African Americans who hold such beliefs, it is not only a considerable challenge but of dire importance for health care organizations to gain trust from the African American community.

#### The Need for Cognitive Closure

Socially, we can attribute African American women’s perceptions and attitudes—specifically conspiracy beliefs—directly to historical interpersonal and institutional discrimination in the United States. However, we may also attribute such beliefs to a psychological phenomenon. It has been suggested that beliefs in conspiracy theories are a result of the fear and feelings of losing personal control (Douglas, Sutton, Jolley, & Wood, 2015; Kay, Whitson, Gaucher, & Galinsky, 2009). More specifically, when an individual believes their personal control is threatened, one method commonly observed to preserve that control and sense of order is by way of conspiracy beliefs (Kay, Whitson, Gaucher, & Galinsky, 2009). Therefore, in the case of African American women, their feelings of fear and lack of personal control may be attributed to historical and institutional prejudices as a minority; thus, conspiracy beliefs may serve as a mean to restore that control.

Fear of losing, in addition to, the desire to maintain personal control and order can manifest as the need for cognitive closure, or NFCC. The NFCC identifies a drive for a certain view

involving preference for order and structure, closed mindedness, as well as discomfort with ambiguity (Webster & Kruglanski, 1994). It involves two basic tendencies. Firstly, it involves a desire to obtain a quick solution or closure (seizing). Secondly, it involves a tendency to preserve this solution, hence maintaining closure (freezing). The NFCC identifies a psychological process and extends to how individuals (conspiracy theorists and non-conspiracy theorists alike) process information and develop beliefs (Leman & Cinnirella, 2013). A high level of NFCC results in a dependence on confirmation heuristics which strengthens previous beliefs (De Dreu, Koole, & Oldersma, 1999). As such, African American women may believe in HIV-related conspiracy theories as they reinforce their perception about discrimination and racism in the United States and may explain their feelings of medical mistrust of the health care system.

#### Purpose of the Study

Despite the recent decline in new HIV diagnoses and significant advances in preventative and intervention strategies, African Americans continue to be disproportionately affected by HIV/AIDS (CDC, 2016). In particular, African American women have the highest rate of new HIV infection after men who have sex with men (MSM) and account for approximately 64% of new infections among women (CDC, 2016). While factors such as age, socioeconomic status, health insurance, and sex partner characteristics play a role in the HIV crisis among African American women (Ivy, Miles, Le, & Paz-Bailey, 2014), psychosocial factors have been understudied. To make matters worse, not only are there few effective HIV prevention/intervention and clinical research initiatives designed to address the unique needs of African American women; there are few US-based studies that have exclusively examined African American women and HIV/AIDS (El-Bassel, Caldeira, Ruglass, & Gilbert, 2009).

Therefore, the purpose of this exploratory study is to determine if medical mistrust can be explained by psychosocial factors such as HIV-related conspiracy beliefs and NFCC among African American women. Research has shown that demographic factors (e.g. age) can explain some of the variance in medical mistrust (Boulware, Cooper, Ratner, LaVeist, & Powe, 2003; Hong et al., 2018), however, it is possible both HIV-related conspiracy beliefs and NFCC will also yield a positive and incremental amount of variance. While the relationships between conspiracy theory beliefs, healthcare services utilization and NFCC have been explored (Cole et al., 2015; Eiser & Cole, 2002; Leman & Cinnirella, 2013; Marchlewska, Cichočka, & Kossowska, 2018); there are no known studies that have examined NFCC as a predictor of medical mistrust nor HIV conspiracy beliefs and medical mistrust specifically targeting this population.

Age was selected as the demographic factor for several reasons. Research suggests there is a positive association between age and HIV-related conspiracy beliefs (Ford et al., 2013). As African American women 35 and older are more likely to become infected with HIV (Ivy, Miles, Le, Paz-Bailey, 2014), studies have also shown that a patient's age can influence their perception of health care interactions, which in turn can impact compliance to treatment and overall lifestyle choices (DeVoe, Wallace, & Fryer, 2009). Lastly, given the many publicized instances of health-related discrimination and unethical practices toward African Americans prior to and during the civil rights' era, most notably The Tuskegee Syphilis Study, age may have a considerable influence on medical mistrust. Thus, in order to effectively recruit African American women into clinical research studies and increase their preventative and treatment-seeking behaviors to reduce health disparities among African Americans in general, it is important to examine the psychosocial implications of their medical mistrust concerns.

## **METHOD**

### Participants

Sixty-one urban-residing African Americans were recruited by the study's investigators. Recruitment efforts took place at community health fairs and undergraduate psychology courses at a historically Black university in the DC Metropolitan Area as part of an ongoing study. For the purpose of the present study, responses from the African American women who completed the pen-and-paper surveys (N=45) were examined. Data from five participants were excluded from analysis because their lie scores on the Need for Closure Scale (NFCS; Webster & Kuglanski, 1996) were greater than 6 with an additional 5 participants excluded for incomplete data. Thus, data from a total of 35 participants were included in the final analysis. The mean age of the sample was 31.8 years. A total of 69% of participants reported having had a prior HIV testing (14% preferred not to disclose). Participants recruited from undergraduate psychology courses received extra credit after completing the surveys (n=15), with all other participants (n=20) receiving no compensation for the study.

### Materials and Measures

*Medical Mistrust.* Medical mistrust was assessed using the 17-item Medical Mistrust Index (MMI; LaVeist et al., 2003) which assesses the degree to which an individual has mistrust in healthcare organizations. Validation of this measure derived from patient/participant focus groups in a study of race differences in utilization of cardiovascular invasive procedures (LaVeist et al. 2003). The MMI has good reliability (Cronbach  $\alpha = .76$ ), scale construct validity [The Trust in Physicians Scale (corr=-0.232,  $p < .0001$ )] and has been shown to be a strong predictor of underutilization of health services (LaVeist, Issac, & Williams, 2009). Statements on the MMI include, "when healthcare organizations make mistakes they usually cover it up" and "healthcare organizations put the patient's health first" (LaVeist, Issac, & Williams, 2009). Given a Likert scale ranging from "strongly disagree" (1) and "strongly agree" (4), six items were reverse coded, and a mean score was computed. Higher scores on the MMI indicated greater levels of medical mistrust.

*HIV-Related Conspiracy Beliefs.* Participants' HIV-related conspiracy beliefs were operationalized using a survey from Clark et al.'s 2008 study on treatment adherence and conspiracy beliefs about HIV infection. The survey had a standardized Cronbach  $\alpha$  of .90 (Clark et al., 2008). Participants reported agreement with 5 statements concerning beliefs in HIV conspiracy theories (e.g., "HIV was released on purpose by the government"). Responses were noted using a Likert scale ranging from "strongly disagree" (1) to "strongly agree" (6) with higher mean scores indicating higher levels of conspiracy belief.

*Need for Closure Scale.* The NFCC was operationalized by the Need for Closure Scale, consisting of 14 items rated on a six-point scale (with an additional two lie scale items) from "strongly disagree" to "strongly agree" (e.g. "I don't like situations that are uncertain", "I'd rather know bad news than stay in a state of uncertainty"). This scale was scored according to the authors' instructions to yield a single overall measure (Cronbach's  $\alpha = 0.73$ ), with higher scores indicating higher need for closure.

### Procedure

The study was approved by Howard University's Institutional Review Board. Participants were informed of the purpose of the study as well as the anonymity and confidentiality of their responses at the time of consent. Participants were then asked by the investigators of the study to



complete a sociodemographic questionnaire, the MMI, the HIV conspiracy survey and the NFCS within a larger set of paper-and-pen surveys regarding cultural mistrust and attitudes towards HIV testing. Surveys were administered in random order and were completed and collected at the sites of recruitment (i.e. community health fairs and undergraduate psychology courses). Completion of the surveys took approximately 30 minutes. Responses were securely filed in a locked file cabinet with a unique identifying number to preserve anonymity.

## RESULTS

A hierarchical multiple regression was conducted to determine if the inclusion of psychosocial factors (HIV-related conspiracy beliefs and subsequently NFCC) improved the prediction of medical mistrust over age alone. Table 1 summarizes each regression model in detail. Due to the small sample size, the adjusted  $R^2$  was reported as recommended by Green & Salkind (2010). The full model of age, HIV-related conspiracy beliefs, and NFCC to predict medical mistrust (Model 3) was statistically significant,  $R^2 = .324$ ,  $F(3, 31) = 4.961$ ,  $p = .006$ ; adjusted  $R^2 = .259$ . The addition of HIV-related conspiracy beliefs to the prediction of medical mistrust (Model 2) led to a statistically significant increase in  $R^2 = .120$ ,  $F(1, 32) = 4.641$ ,  $p = .039$ . Lastly, the addition of NFCC to the prediction of medical mistrust also led to a statistically significant increase in  $R^2$  of .155,  $F(1, 31) = 7.099$ ,  $p = .012$ .

**Table 1: Hierarchical Multiple Regression Predicting Medical Mistrust from Age, HIV-Related Conspiracy Beliefs, and NFCC**

Variable	Medical Mistrust					
	Model 1		Model 2		Model 3	
	B	$\beta$	B	$\beta$	B	$\beta$
Constant	2.37**					
Age	.01	.22	.01	.17	.01	.23
HIV-Related Conspiracy Beliefs			.10*	.35	.06	.05
NFCC					.02	.42*
$R^2$	.05		.17		.32	
$R^2$ (adjusted)	.02		.12		.26	
$F$	1.71		3.27		4.96*	
$\Delta R^2$	.05		.12		.16	
$\Delta F$	1.71		4.64*		7.10*	

Note:  $N = 35$ . \*  $p < .05$ , \*\*  $p < .001$

## DISCUSSION

Although surprising, age did not predict medical mistrust to a significant degree alone. However, research has shown that medical mistrust can be influenced by age-related factors such as education— more so than age itself (Bickell, Weidmann, Fei, Lin, & Leventhal, 2009). With regard to psychosocial factors, beliefs in HIV-related conspiracies was a significant predictor, it only accounted for approximately 12% of the variance. Beliefs in HIV-related conspiracies may not have been a strong predictor of medical mistrust among African American women for several

reasons. First, Bogart & Thorburn (2005) point out that African American men report stronger HIV-related conspiracy beliefs than African American women which in turn, influences their level of medical mistrust and HIV prevention efforts. Therefore, while African American women endorse HIV-related conspiracy beliefs, their beliefs may not be strong enough to significantly impact their medical mistrust. Given that their conspiracy beliefs did not influence their medical mistrust, it is also likely other belief factors are more important among African American women and their distrust in the health care system. For example, beliefs that discriminatory health care experiences as compared to their White counterparts and feelings of inadequate patient-provider relationships may contribute to medical mistrust (Adams & Simoni, 2016) and weigh more heavily than conspiracy beliefs. Lastly, it is possible that the beliefs in HIV-related conspiracies may have a stronger relationship with government mistrust (Ford et al., 2013) than with medical mistrust due to the type of conspiracy beliefs that are centered around HIV (e.g. HIV was released on purpose by the *government*). Thus, other conspiracy beliefs specific to health care may have a more significant association with medical mistrust.

The NFCC was also a significant predictor and accounted for an additional 15.5% of the variance. A possible explanation for this finding may be the motivation to avoid ambiguity of situations at all costs (i.e. predictability desire), even in cases of misinformation or lack of information (e.g. conspiracy theories). In a study concerning medical research participation among African Americans, individuals who reported mistrust in research organizations also had several misconceptions about the Tuskegee Syphilis Study as an example of abuse by a research organization (Armstrong, Crum, Rieger, Bennett, & Edwards, 1999). Individuals with a high NFCC often obtain and use information irrespective of content due to the urgency for closure (Webster & Kruglanski, 1997).

Additionally, the NFCC has perceived benefits to better predict the environment and is often associated with a sense of order, close-mindedness and uncomfortableness with ambiguity (Webster & Kruglanski, 1994; Van Hiel & Mervielde, 2003). Hence, the “seizing tendency” to quickly end a feeling of uncertainty coupled with the “freezing tendency” of relying on past information to maintain current beliefs are important for individuals with high NFCC (Kruglanski & Fisherman, 2009). Also, as Kruglanski and Fisherman (2009) points out, individuals with high NFCC tend to seek less information. Therefore, it may be the case that the participants’ medical mistrust is the result of needing fast resolution regarding the health care system based on their previous knowledge regarding historical incidents of institutionalized racism and discrimination. By having mistrust of the entire health care system as opposed to specific individuals or institutions, it is possible that it reduces the need to seek additional (including opposing) information that may alter their beliefs. Likewise, the NFCC may act as a buffer to the idea that participation in health care services and research may result in the possibility of experiencing mistreatment. Indirectly, this may also provide a rationale for the lack of preventative and treatment seeking-behaviors. Further research is needed to examine this phenomenon and the implications concerning medical mistrust and other health-related behaviors among African American women.

### Limitations

While findings from this exploratory study certainly make a contribution to the understanding of medical mistrust, HIV-related conspiracy beliefs, and NFCC among African American women, there are some limitations. This study had a small sample size with more than

half of the participants from Washington, D.C., with at least some college education (undergraduate), and/or were younger than 40 years of age. Hence, size and lack of diversity within the sample population may limit the degree to which this study can be generalized to our larger community. However, as an exploratory study the aim was to examine a new perspective regarding the critical issue of medical mistrust among African American women. Therefore, while the results may not be generalizable during this initial stage, the current study does provide the framework for more formal hypothesis testing and generalizable results. In addition to a larger and more diverse sample size, other sociodemographic factors (e.g. gender, socioeconomic status) as well as questions regarding a broader range of medical-related conspiracy beliefs also need to be examined.

## CONCLUSION

By examining the concepts of medical mistrust, HIV-related conspiracy beliefs, and NFCC among African American women, we can identify and develop more appropriate strategies based on their unique life experiences and beliefs. In doing so, we may further decrease the level of medical mistrust in the African American women thereby, increasing their overall interest in health-related studies and services. Future studies should expand on this concept given its possible impact on the African American community concerning participation in clinical research and prevention/treatment-seeking behaviors.

## REFERENCES

- Adams, L. M., & Simoni, J. M. (2016). The need for multi-level mitigation of medical mistrust among social network members contributing to antiretroviral treatment nonadherence in African Americans living with HIV: Comment on Bogart et al. (2016). *Social science & medicine* (1982), 159, 58-60.
- Armstrong, T. D., Crum, L. D., Rieger, R. H., Bennett, T. A., & Edwards, L. J. (1999). Attitudes of African Americans toward participation in medical research. *Journal of Applied Social Psychology*, 29(3), 552-574.
- Ball, K., Lawson, W., & Alim, T. (2013). Medical mistrust, conspiracy beliefs & HIV-related behavior among African Americans. *Journal of Psychological and Behavioral Science*, 1(1), 1-7.
- Bird, S. T., & Bogart, L. M. (2005). Conspiracy beliefs about HIV/AIDS and birth control among African Americans: implications for the prevention of HIV, other STIs, and unintended pregnancy. *Journal of Social Issues*, 61(1), 109-126.
- Bickell, N. A., Weidmann, J., Fei, K., Lin, J. J., & Leventhal, H. (2009). Underuse of Breast Cancer Adjuvant Treatment: Patient Knowledge, Beliefs, and Medical Mistrust. *Journal of Clinical Oncology*, 27(31), 5160-5167.
- Bogart, L. M., & Thorburn, S. (2005). Are HIV/AIDS conspiracy beliefs a barrier to HIV prevention among African Americans?. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, 38(2), 213-218.
- Bogart, L. M., Wagner, G. J., Green, H. D., Mutchler, M. G., Klein, D. J., McDavitt, B., ... & Hilliard, C. L. (2016). Medical mistrust among social network members may contribute to antiretroviral treatment nonadherence in African Americans living with HIV. *Social Science & Medicine*, 164, 133-140.



- Boulware, L. E., Cooper, L. A., Ratner, L. E., LaVeist, T. A., & Powe, N. R. (2003). Race and Trust in the Health Care System. *Public Health Reports (1974-)*, 358-365.
- Bruder M, Haffke P, Neave N, Nouripanah N and Imhoff R (2013) Measuring individual differences in generic beliefs in conspiracy theories across cultures: Conspiracy Mentality Questionnaire. *Front. Psychol.* 4:225. doi: 10.3389/fpsyg.2013.00225
- Centers for Disease Control and Prevention. (2016) CDC Fact Sheet: Today's HIV/AIDS Epidemic. Retrieved from <https://www.cdc.gov/nchhstp/newsroom/docs/factsheets/todaysepidemic-508.pdf>
- Clark, A., Mayben, J. K., Hartman, C., Kallen, M. A., & Giordano, T. P. (2008). Conspiracy beliefs about HIV infection are common but not associated with delayed diagnosis or adherence to care. *AIDS patient care and STDs*, 22(9), 753-759.
- Cole, A. P., Gill, J. M., Fletcher, K. D., Shivers, C. A., Allen, L. C., & Mwendwa, D. T. (2015). Understanding African American college students' H1N1 vaccination decisions. *Health Psychology*, 34(12), 1185-1190.
- Corbie-Smith, G., Thomas, S. B., & George, D. M. M. S. (2002). Distrust, race, and research. *Archives of internal medicine*, 162(21), 2458-2463.
- Crocker, J., Luhtanen, R., Broadnax, S., & Blaine, B. E. (1999). Belief in US government conspiracies against Blacks among Black and White college students: Powerlessness or system blame?. *Personality and Social Psychology Bulletin*, 25(8), 941-953.
- De Dreu, C. K., Koole, S. L., & Oldersma, F. L. (1999). On the seizing and freezing of negotiator inferences: Need for cognitive closure moderates the use of heuristics in negotiation. *Personality and Social Psychology Bulletin*, 25(3), 348-362.
- DeVoe, J. E., Wallace, L. S., & Fryer, G. E. (2009). Patient age influences perceptions about health care communication. *Family medicine*, 41(2), 126-133.
- Douglas, K. M., Sutton, R. M., Jolley, D., & Wood, M. J. (2015). The social, political, environmental, and health-related consequences of conspiracy theories. *The psychology of conspiracy*, 183-200.
- Eiser, J. R., & Cole, N. (2002). Participation in cervical screening as a function of perceived risk, barriers and need for cognitive closure. *Journal of Health Psychology*, 7(1), 99-105.
- Edmondson, A. C. (2004). Learning from failure in health care: Frequent opportunities, pervasive barriers. *Quality & Safety in Health Care*, 13 (Supplement 2), 3–9.
- El-Bassel, N., Caldeira, N. A., Ruglass, L. M., & Gilbert, L. (2009). Addressing the unique needs of African American women in HIV prevention. *American journal of public health*, 99(6), 996-1001.
- Ford, C. L., Wallace, S. P., Newman, P. A., Lee, S. J., & Cunningham, W. E. (2013). Belief in AIDS-related conspiracy theories and mistrust in the government: Relationship with HIV testing among at-risk older adults. *The Gerontologist*, 53(6), 973-984.
- Freeman, D., & Bentall, R. P. (2017). The concomitants of conspiracy concerns. *Social psychiatry and psychiatric epidemiology*, 52(5), 595-604.
- Green, S. B., & Salkind, N. J. (2010) Using SPSS for Windows and Macintosh: Analyzing and understanding data. 2010. *Uppersaddle River: Prentice Hall*
- Hammond, W.P. (2010). Psychosocial correlates of medical mistrust among African American men. *American Journal of Community Psychology*, 45 (1-2), 87- 106.

- Hong, H. C., Lee, H., Collins, E. G., Park, C., Quinn, L., & Ferrans, C. E. (2018). Factors affecting trust in healthcare among middle-aged to older Korean American women. *BMC women's health*, *18*(1), 109-109.
- Ivy, W., Miles, I., Le, B., & Paz-Bailey, G. (2014). Correlates of HIV infection among African American women from 20 cities in the United States. *AIDS and Behavior*, *18*(3), 266-275.
- Kay, A. C., Whitson, J. A., Gaucher, D., & Galinsky, A. D. (2009). Compensatory control achieving order through the mind, our institutions, and the heavens. *Current Directions in Psychological Science*, *18*(5), 264-268.
- Klonoff E, Landrine H. Do Blacks believe that HIV/AIDS is a government conspiracy against them? *Preventive Medicine*. 1999;28:451-457
- Kruglanski, A.W., & Fishman, S. (2009). The need for cognitive closure. In Leary, M.R., & Hoyle, R.H. (eds.), *Handbook of individual differences in social behavior*, (pp. 343–353). New York: Guilford
- LaVeist, T. A., Arthur, M., Morgan, A., Rubinstein, M., Kinder, J., Kinney, L. M., & Plantholt, S. (2003). The cardiac access longitudinal study: A study of access to invasive cardiology among African American and white patients. *Journal of the American College of Cardiology*, *41*(7), 1159-1166.
- LaVeist, T. A., Isaac, L. A., & Williams, K. P. (2009). Mistrust of health care organizations is associated with underutilization of health services. *Health services research*, *44*(6), 2093-2105.
- Leman, P. J., and Cinnirella, M. (2013). Beliefs in conspiracy theories and the need for cognitive closure. *Front. Psychol.* 4:378. doi: 10.3389/fpsyg.2013.00378
- Marchlewska, M., Cichočka, A., & Kossowska, M. (2018). Addicted to answers: Need for cognitive closure and the endorsement of conspiracy beliefs. *European journal of social psychology*, *48*(2), 109-117.
- Newman, P. A., Duan, N., Rudy, E. T., Roberts, K. J., & Swendeman, D. (2004). Posttrial HIV vaccine adoption: concerns, motivators, and intentions among persons at risk for HIV. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, *37*(3), 1393-1403.
- Oliver, J. E., & Wood, T. (2014). Medical conspiracy theories and health behaviors in the United States. *JAMA internal medicine*, *174*(5), 817-818.
- Ross, M. W., Essien, E. J., & Torres, I. (2006). Conspiracy beliefs about the origin of HIV/AIDS in four racial/ethnic groups. *Journal of acquired immune deficiency syndromes (1999)*, *41*(3), 342-344.
- Ritchie, A., Gwadz, M. V., Perlman, D., De Guzman, R., Leonard, N. R., & Cleland, C. M. (2017). Eliminating Racial/Ethnic Disparities in AIDS Clinical Trials in the United States: A Qualitative Exploration of an Efficacious Social/Behavioral Intervention. *Journal of AIDS & clinical research*, *8*:648. doi:10.4172/2155-6113.1000648.
- Sheppard, V. B., Mays, D., Tercyak, K. P., & LaVeist, T. (2013). Medical mistrust influences black women's level of engagement in BRCA1/2 genetic counseling and testing. *Journal of the National Medical Association*, *105*(1), 17-22.
- Van Hiel, A., & Mervielde, I. (2003). The need for closure and the spontaneous use of complex and simple cognitive structures. *The Journal of Social Psychology*, *143*(5), 559-568.

- Washington, H. A. (2006). *Medical apartheid: The dark history of medical experimentation on Black Americans from colonial times to the present*. New York: Doubleday Books.
- Webster, D. M., & Kruglanski, A. W. (1994). Individual Differences in Need for Cognitive Closure. *Journal of Personality and Social Psychology*, 67(6), 1049-1062.
- Webster, D. M., & Kruglanski, A. W. (1997). Cognitive and social consequences of the need for cognitive closure. *European review of social psychology*, 8(1), 133-173.
- Williams, D. R., Mohammed, S. A., Leavell, J., & Collins, C. (2010). Race, socioeconomic status, and health: complexities, ongoing challenges, and research opportunities. *Annals of the New York Academy of Sciences*, 1186(1), 69-101.
- Williams, D. R., & Sternthal, M. (2010). Understanding racial-ethnic disparities in health: sociological contributions. *Journal of health and social behavior*, 51(1\_suppl), S15-S27.