

Associations between Socioeconomic Factors and Social Capital amongst Child Caregivers in Eastern Uganda¹

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Abstract: The main objective of the study was to assess the socioeconomic and demographic determinants of social capital amongst child caregivers in the Iganga and Mayuge Health and Demographic Surveillance Site Eastern Uganda. Logistic regression models were used to analyze associations between 4 social capital dimensions and three socio-demographic parameters among child caregivers in ($n=2,582$). The study findings highlights gender-associated differences of perceived social capital implies need for a different approach between men and women when designing interventions that modulate or work through social capital. Female caregivers, living in high quintile households were less likely to perceive high social capital – trust OR 0.67; 95% CI 0.46-0.97; instrumental support OR 0.74; 95% CI 0.58-0.94; informational support (OR 0.57; 95% CI 0.43-0.75). Male caregivers, living in a high quintile household were less likely to perceive high levels of reciprocity (OR 0.64; 95% CI 0.44-0.92). Male caregivers older than 30 years old were more likely to perceive high levels of informational support (OR 1.94; 95% CI 1.01-3.72) and those with more than primary five school level also perceived high levels of informational support (OR 1.94; 95% CI 1.18-3.19) compared to those with less education.

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1. Introduction

Social capital, broadly defined as ‘features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit and purposive action’ (Putnam RD, 1995, Bordieu P, 1986) has rapidly gained acceptance as an important resource in multiple domains (Glaeser EL, 2001). The relevance of social capital in low income settings is tied to its enablement of collective actions that support day to day living especially for socially disadvantaged persons such as the poor, women or ethnic minorities (Fox J and Gershman J, 2000, Ay éM et al., 2002). However, the access to social capital is not universal (Berkman LF and Glass T, 2000). Furthermore, the inequality in social capital is associated with differences in health outcomes (Hyypp äMT and M äki J, 2003, Rojas Y and Carlson P, 2006). For instance, communities with high stocks of social capital are better placed to access essential health care, whilst those with low stocks are likely to be penalized (Choi JY, 2009). If social capital contributes to inequities in access to healthcare, an imperative then for public health policy is to identify those who are penalized (Bryce J et al., 2003). Thus, characterizing those who are likely to be penalized is an important next step in working out possible strategies to redress such disparities.

The variation in social capital depends on both the contextual and the compositional constitution of communities (Kawachi and Berkman L, 2000). Income inequality is an example of a contextual factor that could determine the ecological variance in social capital (Wilkinson R, 1996). From a compositional perspective, individual socioeconomic and demographic characteristics such as income, education and age are also associated with a variation of social capital at a contextual level (Baum FE et al., 2000, Veenstra G, 2002, Carpiano, 2006, Rojas Y and Carlson P, 2006). Furthermore, gender mediates the processes through which social capital is formed and accessed (Katungi E et al., 2008, Skrabski A et al., 2004, Dolan A, 2007, Boneham MA and Sixsmith JA, 2006). This supports the need for a gender disaggregated analysis of the potential compositional factors that influence the spread of social capital.

We have previously shown that in general, social resources are perceived to influence who benefited from publicly provided health services (Bakeera SK et al., 2009). A subsequent study established that contextual variations in social capital amongst child caregivers determined health care use of among febrile children in the Iganga-Mayuge Demographic Surveillance Site (HDSS) in Eastern Uganda (Bakeera S K et al., 2010). In this study, we attempt to establish whether socioeconomic and demographic individual characteristics influence the prevalence of social capital in this low income setting. An understanding of both the socioeconomic and demographic distribution of social capital can help to identify those at risk of social exclusion and who could benefit from targeted intervention (Fox J and Gershman J, 2000).

2. Methods

2.1 Study Setting, Subjects and Data Sources

The study uses cross sectional data from the HDSS in the districts of Iganga and Mayuge in Eastern Uganda collected from 2006 to 2008. The predominant ethnicity of the people in these districts is Basoga. The HDSS data base consists of current community-based information on core demographic events such as migrations, births, deaths and verbal autopsies, education and socio-economic status (Iganga Mayuge Demographic Surveillance Site, 2010). The data collection is modeled on the same framework used by the Uganda Bureau of Statistics for national censuses and other surveys that are the mainstay of information for planning and decision making in Uganda. The

study included 2,582 male and female child caregivers who had complete data for both social capital and socio-demographic (wealth and age) variables. Education information was complete for 2,517 (97.5%) of caregivers. In this study, a caregiver was defined as the person – male or female who usually was in charge of a child’s day to day personal care needs.

2.2 Data Variables and Analysis

2.2.1 Dependent variable

In this study, perceived social capital, the dependent variable was operationalized as four separate dimensions: i) civic trust; ii) informational social support; iii) instrumental social support; and iv) reciprocity.

Initially, the caregiver’s individual score for each dimension was obtained by administering a questionnaire as part of the broader objective of increasing local understanding on the barriers and facilitating factors to health care use. Due to administrative restrictions, the social capital questionnaire in the HDSS was limited to seven questions only. This study is based on six out of the seven questions. The questions were selected based on those suggested to have been extensively used (The National Data Program for the Sciences, Lochner K et al., 1999, Kawachi I et al., 1997, Franke S, 2005, Krishna A and Shrader E, 1999, Hendryx MS et al., 2002, Zukewich N and Norris D, 2005, Stone W and Hughes J, 2001), and in our setting applicable to community level factors influencing healthcare use (Bakeera SK et al., 2009). These questions were pre-tested in villages adjacent to the HDSS before the main pilot to ensure that they were culturally appropriate and that their interpretation was universal.

- i) At the individual level, civic trust was assessed by responses to the following survey item: “Do you think that generally other people can be trusted” (Lochner K et al., 1999, Kawachi I et al., 1997, Nieminen T et al., 2008, Onyx J and Bullen P, 2000). During the pre-test, participants had asked “What do you mean by trust?”, “Is this in reference to our leaders?”, “Exactly what do you mean?” The clarification we provided and adopted for the actual pilot was that trust referred to all those aspects related to day to day life circumstances and activities. It was helpful in a few indecisive cases to use a scale of 1-10 where we asked – “On a scale of 1-10, where would you measure your level of general trust in people?” <5 we scored as ‘no’; equal to 5 and >5 we scored as ‘yes’. The caregiver’s individual level score for civic trust was as follows: (low=care giver answered ‘no’ to whether they thought other people could be trusted and high=care giver answered ‘yes’):
- ii) Caregivers were also asked about informational support: “When you think about your life, are there people around you that you can ask for help?” (Zukewich N and Norris D, 2005). Although the question on ‘help provided’ did not pose interpretation difficulties, participants asked for clarification on who should be included, when it came to ‘how many give help’. For instance, female caregivers wanted to know if persons providing help was limited to their husbands or others outside the household. The universal explanation adopted was that this referred to anybody who gave you the kind of help referred to in the previous question, regardless of the relationship they had with the caregiver. The individual caregivers score for either informational support was as follows: high =yes with >5 persons who could provide advice when needed; medium=yes and 1-5 person who could provide advice when needed; low=no persons who could provide advice when needed.
- iii) Caregivers were also asked about instrumental support: “When you think about your life, are there people that you can trust to give you good advice when you need it?” (Zukewich N and Norris D, 2005). The literal translation for advice (‘amagezi’) and help (‘obuyambi’) are sometimes used interchangeably. To avoid mixing the two words, interviewers were trained to emphasize the difference between the two. ‘Obuyambi’ was explained as ‘tangible support’ whereas ‘amagezi’ was limited to ‘information’. The individual

caregivers score for either instrumental support was as follows: high =yes with >5 persons who could provide help when needed; medium=yes and 1-5 person who could provide help when needed; low=no persons who could provide help when needed.

- iv) Reciprocity was assessed by responses to “Do you think that people around here are generally willing to help each other out” and scored as: (yes=high and no=low) (Kawachi I et al., 1997 , Lochner K et al., 1999, Narayan D and Cassidy MF, 2001).
- v) Community level estimates for each dimension of perceived social capital were created by aggregating the individual responses at the village level (Diez Roux AV, 2002, Szreter S and Woolcock M, 2004). We arbitrarily used the mean as the cutoff point between low and high to create the dichotomous group variables. (Kawachi I and Kennedy BP, 1999). Caregivers were assigned to a category (high, low) on the basis of village of residence level of aggregated social capital dimensions.

2.2.2 Independent variables

We used four independent variables as follows:

- i) Caregiver education status: was categorized as low=completed up to and less than primary five 0; high=completed primary six class and more
- ii) Care giver age category: less than 30 years & equal to or more than 30 years
- iii) Gender: Female and Male
- iv) Household head socioeconomic status (SES) was based on assets also used by the Uganda Bureau of Statistics. Reliability testing was done using Cronbach’s alpha after the items had been screened for relevance. The final list had a Cronbach’s alpha of of 0.82 and included a total of 20 items including housing structure (restroom, floor material, roof material, wall material); living standards (cooking fuel) and possession of household durable items (electric cooker, refrigerator, radio, electric iron, charcoal iron, bed net, kerosene lamp, kerosene stove, car, tea table, camera, television, sound stereo, wheel barrow, cell phone). The first principal component from principal components analysis (PCA) was used to generate an asset index that was used to group all households into wealth quintiles. Caregivers were assigned their household’s head SES.

2.2.3 Statistical analysis

The statistical analysis aimed to determine the level of perceived social capital by socio-demographic parameters. The aggregated social capital dimensions at the community level are used in the analysis. The univariate analyses established the prevalence for each perceived social capital dimension and the socio-demographic and economic factors in the HDSS, separately for men and women. In the bivariate analysis, the gender stratified level of perceived social capital was estimated with respect to four different socio-demographic parameters (wealth, education status, gender and age).

Binary logistic regression models were used to estimate the odds ratios for the different dimensions of perceived social capital by caregiver socio-demographic characteristics, separately for men and women. Gender stratified multivariable models were constructed for each perceived social capital dimension. All independent variables including age, socioeconomic and education status were eligible for inclusion in the multivariable model.

2.2.4 Ethical approval

The Higher Degrees Research and Ethics Committee of Makers reviewed the study and recommended ethical approval. Secondary data provided by the HDSS was delinked of all names and both households and individuals were only identifiable by unique numeric codes.

3. Results

3.1 Gender Stratified Uni-variate Analysis

The prevalence of perceived social capital was different among male and female caregivers for three out of the four dimensions studied in this paper (see Table 1). Perceptions of high reciprocity were more prevalent ($p < 0.001$) amongst male (59.0%) as compared to female caregivers (35.5%). Perceptions of high civic trust were also higher ($p < 0.001$) among male (97.6%) as compared to female (93.6%) caregivers. More male caregivers (20.3%) than female caregivers (16.2%) had higher prevalence of perceptions of informational support ($p = 0.02$).

Table 1 summarizes the univariate distribution of both the dependent and independent variables for female and male caregivers separately.

Table 1 Univariate analysis - Caregiver characteristics for women and men in the HDSS

	N	Men	Women	P-value for difference between men and women
Social capital variables		% (N)	% (N)	
High reciprocity	2,582	59.0 (343)	35.5 (710)	$p < 0.001$
Low reciprocity		41.0 (238)	64.5 (1,291)	
High civic trust	2,582	97.6 (567)	93.6 (1,873)	$p < 0.001$
Low civic trust		2.4 (14)	6.4 (128)	
High instrumental support	2,582	18.4 (107)	19.4 (388)	$p = 0.600$
Low instrumental support		81.6 (474)	80.6 (1,613)	
High informational support	2,582	20.3 (118)	16.2 (324)	$p = 0.02$
Low informational support		79.7 (463)	83.8 (1,677)	
Socio-demographic variables				
Age				
“= & < 30 years”	2,582	15.8 (92)	46.0 (920)	$p < 0.001$
“> 30 years”		84.2 (489)	54 (1,081)	
Household Head SES quintile				
More poor (quintiles 1-3)	2,582	68.9 (400)	60 (1,192)	$p < 0.001$
Less poor (quintiles 4-5)		31.2 (181)	40.4 (809)	
Caregiver education status				
Low (Primary 1-5)	2,517	30.3 (175)	38.8 (753)	$p < 0.001$
High (Primary 6-Secondary 6)		69.7 (402)	61.2 (1,187)	

The majority of caregivers were female 2001 (77.5%). The socio-demographic characteristics were different for male and female caregivers, which further supported a gender stratified analysis. For instance, more male caregivers were older than 30 years whereas the women had almost equal numbers in both age categories. More men compared to women had completed primary five school level. More male caregivers compared to female lived in households where the head was categorized in the more poor wealth quintiles (Table 1).

3.2 Gender Stratified Bi-variate Analysis

Amongst female caregivers, only wealth status of the household head was associated with three dimensions social capital. Caregivers in high quintile households were less likely to perceive high levels of: trust (OR 0.60, 95% CI 0.42-0.86); instrumental support (OR 0.73, 95% CI 0.58-0.92); and informational support (OR 0.57 95% CI 0.44-0.74) compared to those in poorer households. Age and education status did not have a statistically significant association with social capital amongst female caregivers (table 2). Amongst male caregivers, wealth and education status were both associated with social capital. Male caregivers in high income household were less likely to perceive high levels of reciprocity (OR 0.59, 95% CI 0.41-0.85) compared to those in poorer households. Caregivers who had completed more than primary five were more likely (OR 1.81, 95%

CI 1.11-2.93) to perceive high levels of informational support than those who had achieved lower education.

Table 2 summarizes the gender-stratified bivariate analysis for social capital dimensions and the different independent variables.

Table 2 Bivariate analysis - Level of social capital by different socio-demographic variables

	OUTCOMES			
	Reciprocity	Trust	Instrumental support	Informational Support
Women				
Socio-demographic variables (determinants)				
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Age				
"= & < 30 years"	1.00	1.00	1.00	1.00
"> 30 years"	0.91 (0.76-1.10)	0.82 (0.57-1.17)	0.91 (0.73-1.13)	0.94 (0.74-1.20)
Household head SES quintile				
Low (Quintiles 1-3)	1.00	1.00	1.00	1.00
High (Quintiles 4-5)	0.87 (0.72-1.05)	0.60 (0.42-0.86)	0.73 (0.58-0.92)	0.57 (0.44-0.74)
Caregiver education status				
None – P5	1.00	1.00	1.00	1.00
P6-S6	1.00 (0.82-1.20)	0.70 (0.47-1.03)	1.05 (0.83-1.33)	0.87 (0.68-1.12)
Men				
Socio-demographic variables (determinants)				
	(95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Age				
"= & < 30 years"	1.00	1.00	1.00	1.00
"> 30 years"	0.91 (0.58-1.44)	2.18 (0.67-7.09)	1.00 (0.56-1.77)	1.84 (0.74-1.20)
Household head SES quintile				
Low (Quintiles 1-3)	1.00	1.00	1.00	1.00
High (Quintiles 4-5)	0.59 (0.41-0.85)	0.44 (0.15-1.28)	0.93 (0.59-1.47)	0.87 (0.56-1.36)
Caregiver education status				
None – P5	1.00	1.00	1.00	1.00
P6-S6	0.81 (0.57-1.17)	0.17 (0.02-1.32)	1.36 (0.84-2.20)	1.81 (1.11-2.93)

3.3 Gender Stratified Multivariable Analysis

Among female caregivers, the association of perceived social capital with wealth was slightly attenuated for perceptions of low trust (OR 0.67, 95% CI 0.46-0.97) and instrumental support (OR 0.74, 95% CI 0.58-0.94) although these remained statistically significant in multivariable analysis (see Table 3). The association of perceptions of low informational support was not changed in the multivariable analysis.

Among male caregivers, the association of low perceptions of reciprocity with wealth was slightly attenuated but remained statistically significant (OR 0.64, 95% CI 0.44-0.92). The associations of low perceptions of informational support with education status and age were strengthened. Male caregivers who had attended higher than primary five were almost twice as

likely (OR 1.94, 95% CI 1.18 -3.19) to have perceptions of high informational support. Male caregivers older than 30 years were almost twice as likely as those who were younger to have perceptions of high informational support (OR 1.94, 95% CI 1.01-3.72).

Table 3 summarizes the gender-stratified multivariable analysis.

Table 3 Multivariable analysis - Socio-demographic determinants of social capital

	OUTCOMES*			
	Reciprocity	Trust	Instrumental support	Informational Support
Women				
Socio-demographic variables (determinants)				
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Age				
“= & < 30 years”	1.00	1.00	1.00	1.00
“> 30 years”	0.77-1.12	0.83 (0.57-1.20)	0.93 (0.74-1.18)	0.96 (0.74-1.23)
Household head SES quintile				
Low (Quintiles 1-3)	1.00	1.00	1.00	1.00
High (Quintiles 4-5)	0.89 (0.74-1.09)	0.67 (0.46-0.97)* <i>p = 0.035</i>	0.74 (0.58-0.94)* <i>p = 0.014</i>	0.57 (0.43-0.75)
Caregiver education status				
None – P5	1.00	1.00	1.00	1.00
P6-S6	1.01 (0.83-1.23)	0.73 (0.49-1.10)	1.01 (0.87-1.40)	0.96 (0.74-1.23)
Men				
Socio-demographic variables (determinants)				
	(95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Age				
“= & < 30 years”	1.00	1.00	1.00	1.00
“> 30 years”	0.96 (0.60-1.51)	2.56 (0.75-8.6)	1.01 (0.56-1.80)	1.94 (1.01-3.72)* <i>p = 0.05</i>
Household head SES quintile				
Low (Quintiles 1-3)	1.00	1.00	1.00	1.00
High (Quintiles 4-5)	0.64 (0.44-0.92)* <i>p = 0.017</i>	0.47 (0.16-1.41)	0.89 (0.56-1.43)	0.74 (0.47-1.18)
Caregiver education status				
None – P5	1.00	1.00	1.00	1.00
P6-S6	0.90 (0.62-1.30)	0.20 (0.03-1.58)	1.40 (0.86-2.27)	1.94 (1.18-3.19)* <i>p = 0.009</i>

Note: **p* values included for statistically significant values

4. Discussions

This study shows that in this low-income setting, there are gender differences in the prevalence of perceived social capital. Furthermore, these gender differences in the prevalence of perceived social capital among child caregivers in the HDSS appear to be modulated by the collective and individual socioeconomic and demographic constitution of caregivers in this setting. The observed association between social capital with education status and age suggests that this depended on the proportion of caregivers with a particular characteristic. For example, there were a higher proportion of male caregivers than female with high education; the association of education with social capital was only observed among male caregivers. Similarly, older age had a positive association with social capital only for male caregivers; a higher proportion of female caregivers were younger as compared to males.

On the other hand, the association of wealth with social capital, does not appear to depend on the proportion of caregivers with this characteristic. For example, there was a negative association of wealth with social capital amongst both male and female caregivers even though there was a higher proportion of the latter among high quintile households.

4.1 Gender and Social Capital

Several studies indicate that the processes through which social capital is developed and accessed are different for men and women (Boneham MA and Sixsmith JA, 2006, Katungi E et al., 2007, Skrabski A et al., 2004, Dolan A, 2007). The use of different measures of social capital in documented studies limits a comparison of the results to general rather than specific terms (Nieminen T et al., 2008). This study observes these gender differences from two perspectives. First of all, there were gender differences in which socioeconomic and demographic variables are associated with social capital. Among women caregivers, only wealth had a statistically significant association with social capital. Among male caregivers, wealth, age and education status all had statistically significant associations with social capital. This suggests that in this setting, wealth status facilitates the formation and/or access of social capital amongst female caregivers, whilst this process among male caregivers could be modulated by wealth, age and education. The second aspect is which social capital dimensions varied by socioeconomic and demographic variables. Among male caregivers, the dimensions of reciprocity and informational support varied by some socioeconomic or demographic variable. Amongst female caregivers, dimensions of trust, instrumental support and informational support varied. The subsequent sections attempt to explain the gender differences in the association of social capital with each of the independent variables.

4.2 Wealth and Social Capital

In previous studies, being in wealthier quintiles was associated with higher perceptions of social capital (Nieminen T et al., 2008, Glaeser EL et al., 2000). In this study, female caregivers living in high quintile households were less likely to perceive high trust, informational and instrumental support compared to those in low quintile ones. Among male caregivers, those in high wealth quintiles were less likely to perceive high levels of reciprocity. In other words, both male and female caregivers in this study with lower wealth status perceived higher levels of trust, as well as informational and instrumental support and reciprocity. The negative association of reciprocity and wealth is unexpected. Reciprocity assumes an equal means of exchange (Putnam RD et al., 1993), and therefore one would expect that wealthier persons would perceive higher levels of this social capital dimension. However, being in a higher wealth quintile in this community is not a guarantee for absolute wealth, since these comparisons are only relative (Kappel R et al., 2005). Therefore it is likely that many of these male caregivers may not have had viable means of equal exchange in spite of being in a higher wealth quintile. A similar analogy can be drawn for the negative association of wealth and social capital dimensions among female caregivers. It is probable

that being in a higher wealth quintile in this setting is also a marker for some other characteristic not described in this study that may also modulate the association with wealth. For example, we did not establish the marital status of women in the study sample. However, this speculation is best assessed by further qualitative inquiry.

An alternative and probably more plausible explanation for the contrasting wealth distribution of social capital for both male and female caregivers could be related to the nature of social organization in African societies where collective action to address the needs of the disadvantaged is a typical way of life (Ware NC et al., 2009, Ayé M et al., 2002). An example is seen in Ivory Coast where poor people were able to access expensive medical care by virtue of belonging to such supportive networks (Ayé M et al., 2002). Thus, those with lower SES can be expected to have higher perceptions of social capital by virtue of the responsive support systems within a community.

4.3 Education Status and Social Capital

Male caregivers who had attained more than primary school level perceived about twice the level of informational support compared to those who had not. The finding of a positive association of level of education and social capital is also consistent with other previous studies (Stone W and Hughes J, 2001, Nieminen T et al., 2008, Lin N, 2001, Glaeser EL et al., 2000). The lack of association between any social capital dimension and education status among women caregivers could be explained by level of education. In this study sample a smaller proportion of women compared to men them had attained school education beyond primary five. A lower level of education may affect literacy skills and subsequently undermine women's capabilities of harnessing available informational support, particularly in this setting where its prevalence is low.

4.4 Age and Social Capital

Male caregivers who were older than 30 years perceived twice as much informational support compared to those who were younger. This could be explained by the reasoning that older caregivers have been around longer and have had more opportunity to develop trust and access avenues for informational support. This finding is consistent with other studies that report that being younger, is associated with having lower levels of community social capital (Glaeser EL et al., 2000, Whiting E and Harper R, 2003).

Our earlier work in the HDSS showed that perceived social capital was an independent predictor for the use of health care services (Bakeera S K et al., 2010). The potential policy relevance of findings from this study is linked to the role of child caregivers in health provision for young children. As an illustration, prevalence patterning of social capital suggests that in this setting, interventions that address informational barriers to use of effective health care could target female caregivers from higher income quintiles, younger male caregivers and those with low levels of education.

4.5 Methodological Considerations

There is generally a paucity of documented results on the socio-demographic variation of social capital (Nieminen T et al., 2008). However, the finding of a differing effect of each socio-demographic determinant on social capital dimensions is consistent with previous research and supportive of the need for a separate analysis of the determinants and dimensions of social capital. In this study, social capital is assessed using individual perceptions which are different from more comprehensive measures that are more objective (Krishna A and Shrader E, 1999). It is not certain whether findings for the two measures would be comparable. Furthermore, as with other studies that rely on secondary data for the analysis of social capital, a limitation of this study is the narrow scope of assessment of social capital compared to other studies (Stone W and Hughes J, 2001). The lack of association between any socio-demographic parameter and the social capital dimension of

reciprocity for female caregivers could be attributed to the way the questions were asked. During the pre-test, the research team noted that women caregivers were particularly careful about who they mentioned as providers of informational and instrumental support. Although research assistants were trained to probe and encourage openness during the actual social capital pilot, there is no guarantee that female caregivers did not limit their responses to those that were culturally acceptable. Additionally, not qualifying the nature of relationships of who and which type of people caregivers associated with limits the scope of interpretation. For example, if women have more bonding and men bridging and linking etc. Further qualitative inquiry could provide a more elaborate description on the differences in the type of social capital between men and women. A final consideration is that given the cultural diversity of the country, these study results should not be generalized to other areas.

5. Conclusion

This study highlights gender-associated differences of social capital implies need for a different approach between men and women when designing interventions that modulate or work through social capital in this setting.

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