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How COVID reconfigured family relationships: Explaining the work of academic women through the lens of complexity theory

Abstract

Since 2020, there has been a flurry of research on the impact of Covid-19 on families, and some research on the effects of the pandemic on academic parents. However, little is known about how the pandemic reshaped academic women's family lives and how this influenced their teaching, research, and inner selves. This innovative study of South African university-based female academics from 2020 to 2021 investigates how Covid restructured family lives in relation to children, partners, elderly parents, and outside support (domestic workers, gardeners, etc.), and what this meant for their academic work. A complexity paradigm is used as the framework, and it provides a relevant approach by recognising that elements interacting in a system result in emergent outcomes that are more complex than can be predicted at the outset. This paper will show that the pandemic-enforced lockdown exposed vulnerability threats to the Education for Sustainable development (ESD) both in terms of the direct education goals (such as lifelong learning opportunities and discrimination in education) as well as the cross-over goals from other sectors (such as health and well-being, gender equality, and decent work and sustainable growth).

Keywords: Academia, Covid-19, family life, female academics, gender

1. Introduction

The impact of the pandemic-enforced lockdown on women's academics has been well-documented (Collins et al., 2020; Walters et al., 2022; Minello, 2020; Myers et al., 2020; Nash & Churchill, 2020). While male academics can be assumed to experience many of the same challenges posed by the enforced lockdown, this research indicates that these challenges have been exacerbated for women academics during the Covid-19 period (Meyers et al., 2020; Walters et al., 2021). It is noteworthy that 80,34% of women in our current study (n=2,029) perceived that doing academic work at home during the pandemic was "more" to "much more" difficult for them than for men. This paper is part of a broader project examining the effects of the

pandemic-enforced lockdown on female academics. The complexity framework used here offers a broader approach to investigating the problem and reveals opportunities for future research in understanding the effects of the pandemic on universities.

2. Research methodology

The survey questionnaire distributed to female academics at South Africa's 26 public universities was used in this study to assess the impact of the lockdown on their academic careers. The survey contained 13 Likert-scale questions, followed by an open-ended section for narrative comments. An initial pilot study was undertaken in which a draft survey instrument was used. After distributing the draft survey to a few female academics, the authors used their feedback to improve and finalise the instrument. The sample included all women working in academic portfolios at various universities, including lecturers at all levels, department heads, researchers, and administrators. We e-mailed an invitation to all 26 public universities, and after we had completed their ethical clearance procedures, each university distributed the survey to female academics who met the specified criteria. In total, 2 029 female academics took part in the study, and their responses were recorded and analysed.

During the data collection period, all South Africans, except essential workers, were by law required to shelter at home under "lockdown". Therefore, universities had to make a swift transition from face-to-face lectures to online teaching and learning. The online survey was distributed to universities before 1 July 2020 and closed on 30 September 2020. Through textual analysis facilitated by Atli.ti software, the research team identified emergent themes from the qualitative data provided in the narrative section of the survey.

3. Ethical considerations

Ethical clearance for the study was obtained from the relevant committee at Stellenbosch University. In addition, each university provided gateway clearance certificates for the survey to be administered to its community. All participants were informed of contact information for emotional and psychological counselling support at their institutions in the research documentation for the study. A comprehensive outline of the study and its purpose was provided to each participant, together with assurances of anonymity and confidentiality.

4. Literature review

Cultural and gender beliefs and norms influence how people interact in their daily lives (Borelli *et al.*, 2017). In turn, these aspects inform an important part of our daily living and how we manage our lives. As a result of these cultural and gender norms, women are often required to be caregivers in the family. Blickenstaff (2005) makes visible the pattern in which men constitute the majority of scientists and engineers in most industrialised countries, thus solidifying the gender disparities within academia. It must be noted that the challenges academic mothers face within academia, such as unequal remuneration compared to their male counterparts, workload, and meeting promotion criteria, often add to the inequality within the academic workplace (Gabster *et al.*, 2020). Generally, working mothers struggle with the conflict between the demands of home life and their work requirements. In addition, working mothers who struggled to fulfil the gender roles of caregiver, home-school teacher, and cook often resulted in feelings of guilt, inadequacy, and negativity, which extended to their academic performance in the workplace (Borelli *et al.*, 2017).

A primary feature of the Covid-19 pandemic is the complexity of the responses to the crisis, apparent in everything from the closure of all non-essential businesses, schools, and public universities to the need to socially distance and to get health care system the resources to combat the virus. Thus, applying a complexity lens to the conditions that confront us promises to improve our understanding of the current Covid-19 pandemic.

5. Theoretical framework

Complexity science is a set of interdisciplinary theories that has its origins in the biological and physical sciences, but which has now also moved into the social and management sciences (Marion & Uhl-Bien, 2001: 389). Wernli *et al.* (2021) posit that complexity science is not a unified theory but rather “a collection of concepts, theories and methods that are increasingly influencing a range of scholarly disciplines”. In the opening chapter of his seminal book *Complexity and Postmodernism: Understanding Complex Systems*, Cilliers (1998: 3) argues that a complex system is not constituted merely by the sum of its components, but also by the “intricate *relationships* between these components”. This definition emphasizes the dynamic interaction, unpredictability, and emergent properties that are difficult to predict in an environment that is volatile, uncertain, complex, and ambiguous. Further, Cilliers provides a useful description of the characteristics of complex systems, which include the dynamic interaction of many elements, the non-linearity of such interactions, and the open-endedness of those interactions with the environment. Human families are the setting of such complex systems. Various elements, such as stress over finances and anxiety about health, especially during the pandemic, create uncertainty within families, and from the interactions within them emerge adaptability and self-organisation for survival.

The distinguishing properties of the complexity paradigm include uncertainty, emergence, self-organisation, adaptability, and non-linearity. The table below summarises the key properties of the complexity paradigm, as well as the characteristics of complex systems.

Table 1: Characteristics of complex systems (Adapted from Cilliers, 1998)

Characteristic		Explanation
1.	Elements	Complex systems consist of a large number of <i>elements</i> . When the number is relatively small, the behaviour of the elements can often be given a formal description in conventional terms. However, when the number becomes sufficiently large, conventional means (e.g. a system of differential equations) not only become impractical, but also cease to assist in any <i>understanding</i> of the system.
2.	Interaction	A large number of elements are necessary but not sufficient to establish complexity. For example, the grains of sand on a beach do not interest us as a complex system. To constitute a complex system, the elements have to interact. And this <i>interaction</i> must be dynamic.
3.	Rich	The interaction is rich, i.e. any element in the system influences, and is influenced by, quite a few other elements. The behaviour of the system, however, is not determined by the exact number of interactions associated with specific elements.
4.	Non-linear	The interactions are <i>non-linear</i> . Non-linearity also guarantees that small causes can have large results, and vice versa. This is a precondition for complexity.
5.	Short range	Interactions usually have a fairly <i>short range</i> .

Characteristic		Explanation
6.	Loops	There are <i>loops</i> in the interactions.
7.	Open systems	Complex systems are usually <i>open systems</i> , i.e. they interact with their environment.
8.	No equilibrium	Complex systems operate under conditions far from equilibrium.
9.	History	Complex systems have a history. Not only do they evolve through time, but their past is co-responsible for their present behaviour.
10.	Ignorance	Each element in the system is ignorant of the behaviour of the system as a whole.

The complexity paradigm captures the reality of women academics and their family relationships by moving away from a linear and mechanistic view of the world, in which simple cause-and-effect relationships are sought to explain social phenomena, to a perspective of the family that is non-linear and organic, and characterized by uncertainty and unpredictability.

6. Findings and discussion

Covid-19 radically reconfigured family life. In an instant, long-established domestic relationships, rules, rituals, and routines were scrambled (Prime, Wade & Browne, 2020: 631), thereby throwing family dynamics into disarray. Nowhere was this more evident than in periods of 'hard lockdown', when governments and health officials across the world advised citizens to shelter in place at a time when relatively little was known about the workings of the highly infectious and deadly virus SARS-CoV-2.

It was not simply that everyone was at home under one roof. Normal life activities that would otherwise happen elsewhere now had to be continued in one congested space. Babies and toddlers had to receive nursery care. School-aged children had to be supported in learning, if not formally home-schooled. Elderly parents had to be cared for. The spouse did his or her office work. And, amidst this congestion, the academic woman had to do her online teaching, research, and administration. The stress resulting from working under such conditions of containment was inevitable.

The data below offer a powerful window on the recasting of family dynamics during the pandemic lockdown and on how this impacted the working lives of academic women in South Africa. In other words, we examine family dynamics in households up close and personal through the eyes and voices of our principal subjects, academic women working from home. Using the complexity theory, the following themes were outlined and discussed.

6.1 The reconfiguration of space and time

To understand the drastic changes within the household during lockdown, one has to begin with the setting in which they happen – the home as a physical space. A study by Agca-Varoglu (2021:58) has established that the home “gained a new meaning as the only place in our everyday lives during self-quarantine”. One early-career academic and mother of two young children observed, with some economy, that “the lockdown squeezed everything under one roof”; children were at home from school, spouses and partners were at home from work, and elderly parents and the infirm were also at home. Extended family shared the same space, and nobody could leave, except for a designated person – often the academic woman – to do the shopping or pharmacy run.

Among the first things academic women and their partners discovered was that the constraints of the new situation required that the physical space had to be negotiated. A kind of shape-shifting then happened between them:

Space is limited. We share office space. We both need to meet with colleagues and students frequently using online platforms. We can't have meetings at the same time. If we do, one of us has to move to the kitchen. (Established academic with no children)

For an experienced academic with a three-month-old baby, the reconfigured space took the form of "a fold-up table in my sitting room as my 'office' and a baby on my lap during meetings most of the day".

This renegotiation of physical space for work was commonplace in lockdown situations as occupants of the household tried to work around each other and find new places in which to continue to do their jobs. At work but also at home, finding working spaces indeed led to a "very liquid, changing environment", as one mid-career academic without children put it. Sometimes it was impossible, in tight and limited physical spaces, to find an unoccupied working area. "I don't have a home office," said one experienced academic, and so "I work where my three-year-old plays."

What this implied, of course, was a dramatic reorganization of once-stable familial roles in which, as one mid-career academic with a toddler and a primary schooler put it, "I had to become five people in one." This meant that she had to take care of children; cook for the family; shop for the household; do daily chores, including cleaning the house and washing clothes; and care for the elderly and infirm.

During the crisis, this recasting of family roles revealed a stubborn continuation of traditional and hierarchical gender assignments that privileged men – their work and their spaces. As will be shown below, the protestations of a few respondents that the survey design only focused on women and assumed that men were not contributing equally to family life during Covid was largely nullified by the accounts of most of the academics in this study: the scrambling of family roles ended up with men still in privileged spaces under the lockdown arrangements.

The reorganized spaces for living and working meant that established routines with children also changed:

They [the children] are used to having more of my undivided attention during normal school/work rhythms, but with them being at home, they said it felt like I was constantly working. (Experienced academic and mother of two teenagers)

Here is an important insight that the blurring of the boundaries between home and work, and how that is experienced by others in the new physical space. For example, most women in this study reported that, because of the altered spaces, the amount of new work they were doing had increased dramatically, leading to constant exhaustion.

Shared spaces meant shared equipment in many homes where families could not afford additional devices for the children, compounding the work of the academic mother. In the case of one mid-career academic, "The online schooling of two children meant that they used my computer and laptop to work, and they simultaneously required help with the actual work".

Something changed beyond the new physical spaces and the consequent demands placed on academic women and their work: time itself was reconfigured, as so eloquently captured in this account by an experienced academic with no children, "... your impression of time is

loosened from the perceptual mooring of reliable events, familiar locations, and community interactions". This destabilization of time and space in the lives of academics working from home significantly increased workloads and levels of stress. As time and space were altered, familiar roles, routines, and rhythms changed as well, and this especially affected relations between academic women and their children.

6.2 The children

It is now well-established in the literature on Covid that the single most important factor behind the productivity of women scientists is the presence of a child in the home (Walters *et al.*, 2022). What is less clear from preliminary survey research is how children influence women's academic work and which children have a greater influence (in terms of age, ability, etc.); what this means for roles and relationships in the broader family unit; and the consequences of children in the home on performing scholarly work under lockdown conditions.

The first thing to record is that the age of the child matters. "Mothers of toddlers may experience heightened work-family conflict, and thus work-family guilt and work-interfering-with-family guilt, as compared to mothers of older children, because the gender beliefs regarding mothering are even stronger when children are young" (Borelli, 2020:364). This narrative is supported by Myers *et al.* (2020) and Yildrem & Eslen-Ziya (2020) where having a baby or toddler impacts the academic mother severely, since her time and attention is devoted to her young child. As the mother of children aged one and three, an experienced academic, reported, "they require constant care, love and attention and are not able to entertain themselves, especially the one-year-old".

Under lockdown conditions, there was no support system to share in the task of childcare, as private and public childcare facilities, as well as domestic help, were unavailable. Mothers were almost entirely responsible for baby care, which meant that their academic work could only be completed late at night. Even so, with a baby waking at all hours, university work was still disrupted, increasing academic women's anxiety about their slowed productivity. With older children not yet in school, the academic mother had one option not available in the case of babies: screen time. Putting a young child in front of a tablet or television, at the very least, allowed for some time to get academic work done. Invariably, this brought on enormous guilt among mothers who would not normally have allowed excessive screen time. "I wonder," said one mid-career mother of two pre-schoolers, "whether I will ever get over the guilt of letting my children have 8+ hours of screen time per day. I hope they will be fine!"

Out of sheer desperation, the ability to at least get some academic work done meant compromising on a pre-pandemic principle of little-to-no screen time. About 80% of the academics in this study spoke, with some discomfort or even pain, of having to use screen time with toddlers and older children to free up time to meet at least some of their academic obligations.

Academic women without children (15%), commented about their relative advantage compared to their colleagues. Sometimes this was expressed as feelings of guilt, and at other times in empathetic tones, as from this mid-career academic: "I have no idea how my colleagues with children could manage their academic work." This certainly does not mean that academics without children had no problems within familial or personal contexts; indeed, several spoke of loneliness, and also of spatial constraints, despite the absence of children.

In the same vein, 54% of academic mothers had school-aged children. They had different struggles that framed their changing relationships with these younger members of the family. They had to take over some of the teaching support roles that would normally have been done largely by their school-based teachers. Some parents took the education of their children from home very seriously, even regarding it as more important than their academic obligations to the university. Even with online teaching from the school, academic mothers found a significant amount of their time given to providing learning support for their children.

An added dimension to the changing familial relationship was how the child understood her mother's presence at home. While the academic mother was eager to get on with her university work, the child's sense was that his mother's being at home meant playtime, as would have been the case before the lockdown. This was very frustrating for academic moms, because it meant that work time was constantly interrupted based on pre-pandemic understandings of what happens when mothers come home from work.

In a few cases where children were grown-up, such as university youth, there was a clear sense of relief among mothers that their own roles were diminished and that their grown children could assist them. Older children could help around the house and play supportive roles in relation to family needs. One established academic was grateful that "my [married] children have helped me by sending meals on days when I have not managed to cook because of having to meet deadlines".

And yet, for children at home – of all ages – there were other needs as well. That is, many mothers spoke of now having to tend to the emotional and psychological needs of stressed children across the age spectrum. This was especially challenging in the case of academic mothers at home who cared for children with disabilities – a problem made even more difficult by the uneven distribution of domestic labour between academic mothers and their spouses.

In short, Covid not only changed but also increased the previously steady familial dynamic between academic women and their children, with clear implications for academic work. It should also be noted that there was an often-articulated ambivalence among mothers about being at home with their children. On the one hand, this was a unique opportunity to spend more time with their offspring than was possible in pre-pandemic times. On the other hand, the burden of need on the part of children locked down in the same space meant that much more time had to be devoted to taking care of their social, intellectual, and emotional needs.

6.3 The husband

Covid created, revealed, and intensified relational stresses between academic women and their partners. Ninety percent of the women in this study referred to their spouses as husbands, and we refer to them as such. Collins et al. (2020: 2) confirm that "the pandemic may further exacerbate gender gaps in childcare and housework at the cost of women's work commitments". The data on academic women's relationships with their partners during lockdown revealed three broad trends.

On one end of the spectrum, and for a very small minority of women, their husbands were praised for equally sharing housework and childcare. These are the words of that small company of women:

I fortunately don't have children to look after and live with a partner who is very happy to split the household chores. (Early-career academic)

My husband helps with house chores and dinner; I prepare breakfast and lunch.
(Experienced academic with a child in primary school)

My husband helps a lot during lockdown with house stuff which meant that I had to do even less than 'normal'. (Early-career academic without children)

It is a challenge looking after a baby and working full-time but my husband is very involved, and we share the load as he is also working from home during the lockdown.
(Experienced academic)

Academic mothers who tried to be organised presented detailed schedules for childcare or housework that divided the domestic labour between the two partners, while in other households it was simply the way things had always been done: sharing the burden of cleaning, cooking, and care. It is clear from all these cases that these were pre-pandemic routines well-established between partners used to cooperation at home. These arrangements flowed smoothly into the lockdown period.

Most academic women, on the other hand – despite the fact that both members of the couple worked and there were children in the home – received little to no help from their husbands. This could relate to culture and tradition:

Housewifery was taxing especially in African homes like mine where the women is expected to make sure food is cooked every day alongside carrying out the other household chores. (Experienced academic with a child in primary school and three adult children)

My husband expects me to be a wife and serve him as per culture because I am at home.
(Established academic without children)

My husband expects me to do the dishes. (Early-career academic with no children)

Domestic responsibilities are mainly my responsibility as the female in the home. (Early-career academic with no children)

These descriptions were offered either as something normal, perhaps even accepted, or with a hint of criticism that something is wrong. Nevertheless, there was little sense of outrage from those who linked role expectations to their African culture.

For others, there was certainly anger and distress at the fact that spousal relationships come with highly unequal distributions of domestic labour between the academic woman and her husband during the lockdown. "We are supposedly equal partners," said one established academic and mother of a pre-schooler, but the pandemic revealed the truth – they are not. The myth of equality in domestic relationships is even held by the men in the household, regardless of the reality of overburdened women. To illustrate the point, this excerpt from one of the transcripts is worth quoting at length:

My husband, when I confront him, says, "But I just don't notice when you answer the children's calls/remember to make them snacks/read the school's WhatsApp messages and do the school activities with them". Unless I write it down for him, he does not remember the children's schedules. He does not cook unless I force him to. He responds with affront when I expect him to mind the children for half the workday, so that I can at least get some of my work done. And he is an educated, middle-class man who thinks of himself as a feminist. I feel as if I have to fight all the time, at work and at home, just

to have everything I do acknowledged as visible work, let alone get some equity in the distribution of work. Male privilege is simply transparent to those who benefit from it, at work and at home. (Early-career academic with two young children)

There are several fascinating insights from this extended quotation on which to reflect. One is the extraordinary struggle of the academic woman to get her husband's attention, sometimes using coercion to get him to share domestic duty. "I sometimes get tired of asking for help," as an early-career mother of a teenager responded. Notable too is the self-understanding of the man as progressive, even a feminist, but without any insight into what that should mean for equality in the home. Most enlightening is the nugget of insight shared by an early-career mother of a toddler and a primary schooler about women's work being 'visible' – the capacity to see or recognize women's work in the home.

The same question was raised by another academic woman in relation to her husband:

I think I take on more duties in the home, not because my husband is lazy, but because he does not seem to 'see' the things that need to be done. This is the same as before the lockdown. (Experienced academic with a child in primary school)

What is seen or not seen within the context of women's work at home is clearly not about physical sight, but rather about powerful gender socializations that either renders work ordinary, commonplace, and invisible (for women), or extraordinary, valued, and visible (for men). For the academic concerned, this behaviour represents a continuity of unequal relationships in the home, just as "before the lockdown".

Those unequal relationships were also evident in the spatial arrangements for work. The husbands enjoyed priority in the location of physical space for work. In larger homes, this was not a stressor, but in more compact residences, with children and elderly family, the problem was compounded. The husband had first choice and could quite literally close the office door and seclude himself from the more volatile and occupied spaces left for the academic woman and other members of the family.

In a third group of academics, there is neither a reluctant acceptance of the traditional roles of women in relation to men, nor a direct challenge and anger towards the privileges that men held in the lockdown. This group, while acknowledging the husband's contribution, also complained about the inadequacy and inequality that results, despite the positive role of the spouse. For a significant number of academic women, there is a studied ambivalence:

Even with both of us here, sharing the childcare and home-school responsibilities, I have had significantly less time available for work. It is simply not a realistic expectation that I have to work full-time, home school my kids, buy food and cook, and clean my house. (Mid-career mother of two children in primary school)

Even though I have a very supportive partner, I am still the primary caregiver. (Experienced academic with a child in primary school)

Unlike my husband, I can't just close a study door and disassociate myself from the needs of the rest of the family. (Established academic with a child in primary school)

Even though I have a very supportive husband, who is also working from home, I have been responsible for the majority of the childcare while in lockdown. (Early-career mother of pre-schoolers)

There are several reasons evidenced from the data for this studied ambivalence among the third group of academic women. One is that while the pre-pandemic routines of family interactions were disrupted, they were, in many other ways, still stable. For example, when a child in the household experienced a crisis, she would seek out the mother rather than the father. There were also patterns that reset after the initial disruptions to family routines, such that the father's work once again enjoyed priority, despite the new conditions of lockdown. Thirdly, the academic women in the study, of their own volition, allowed such resettlement to happen in favour of the spouse. This needs elaboration from the data in hand.

Academic women sometimes started by claiming that their husband's work was more pressing, if not more important, in relation to their own, as related by this early-career academic without children: "My husband's work is more demanding at the time, with all-day meetings." Even when both partners worked at the university, it was common that "his academic obligations definitely enjoyed preference above mine", as one experienced academic without children put it. There was often a rationalization that sought to excuse the lesser involvement of the husband in the family, such as these:

My ex-husband is a medical researcher and has to fulfil essential service functions.
(Early-career academic with a child in primary school)

My husband is the primary breadwinner [and] we prioritized duties ... however more of the cleaning, cooking, and childcare duties fell to me as his workload increased. (Early-career academic with a pre-schooler and a child at primary school)

My husband is working for the government in a different province ... he has not been coming home as before the lockdown ... there is no assistance from him at all. (Experienced academic with a child at primary school)

The nature of my husband's job ... has meant that I have had to do the majority of the housework. (Established academic and mother of a pre-schooler)

The understanding and acceptance of the husband's constraints of work, and therefore his reduced contribution to domestic responsibilities, do not apply to the women in any of the data; that is, their constraints are not recognized or accommodated. In fact, the women's responses reveal an empathetic accommodation of their husband's personal needs. Singular examples will suffice. The husband lost his job and suffers from stress and depression; the wife provides and is expected to provide, the necessary emotional support. "He does less," shared one early-career mother of two primary-school age children, "but expects me to take care of his emotional needs." In some cases, this accommodation of the husband's needs even meant that women felt uneasy when the partner *did* contribute: "My husband helps," said one woman academic, "but I still feel guilty [about it]."

These inequalities are so embedded within family relationships that even when both partners are academics and have the same university commitments, the husband does considerably less than his partner. One respondent made the striking point that even though she is the more senior academic at the university, she still does most of the work at home. In the same way, another female academic partner reported that the university expected her husband to continue his work as if he has no domestic responsibilities under lockdown.

"It would have been easier if I had been a man," said another academic woman, reflecting on the consequences of this unequal division of domestic labour in the home. Needless to say, such situations often led to stress and strained relations in the home:

I have a very involved husband and we try to juggle work and kids, but ultimately, when we clash, it is the mom's work that suffers. (Early-career mother of two toddlers)

Such intimate clashes caused anger, discomfort, and even resentment in the spousal relationship, as this experienced academic without children explained:

Was hard having my husband around ... we work very differently, and he is quite disruptive. I also do all the house-related things and he acts like his work is way more important and serious than mine is, and because he earns more, the uneven distribution of household work is deemed fair by him.

Inevitably, relationships were strained, and in at least one case the academic reported that she and her spouse had separated. The underlying problems in the relationship were always there, she conceded; what the lockdown did was to make those problems more visible and to force a resolution of an unworkable relationship.

6.4 The self

One of the more important findings from this study is how women academics made sense of themselves in relation to the family unit. Minello (2020) uses the term "maternal wall", which refers to the discrimination and limitations that working mothers face; thus, an image that emerged strongly and consistently across the data set was the understanding among women that they were at the center of family dramas and stresses when Covid hit. We therefore see an interplay of cultural norms which overflows into and influences the idea of 'self'. Despite themselves, they would have to be caregivers, cooks, and cleaners. Put differently, they were responsible for the physical, emotional, spiritual, educational, and psychological needs of the entire family, including their partners. This awareness that "everything fell on me" (in the words of a mid-career mother of a toddler) was at the centre of, sometimes, extreme stress and strain on the part of academic women.

What intensified these felt emotions of distress and despair was the absence of a set of external support structures, which simply shifted those functions onto the academic women working from home. It was a revelation, as one established academic and mother of a teenager found: "I was surprised at how quickly I was rendered a servant."

Under these circumstances, academic women did not fight or resist the multiplying demands on their time; in fact, they embraced it, despite the personal costs. Some felt compelled to respond beyond what was required, like this early-career mother of toddler: "I felt the inherent need to do more because I am a woman."

In this respect, a difficult matter about South African gender sensibilities needs to be acknowledged: the pandemic lockdown revealed that, despite the assumptions in the broader social and political landscape about progress on gender relations and equity (at least in the academic world), the reality was quite different. Academic women often reverted to traditional roles and expectations. What these academic colleagues said was, "I am usually more responsible for the health of the family" (mid-career mother of a pre-schooler and a primary schooler); "the bulk of the [children's] schooling fell to me" (experienced academic and mother of a child in primary school and another in high school); and "women do everything."

The academic women in the study were also conscious of the costs exacted on their bodies and emotions: “the responsibility of keeping everyone else going overwhelms me”, reported one established academic without children. The same costs were keenly felt in the academic aspirations of women and their chances of career success.

While the personal and career costs were great, academic women still felt the need to mask their own anxieties so that the family, in turn, could remain calm:

It was difficult having to deal and carry the emotional load and try to be the mother and not show it to the kids so that they shouldn't panic and have heightened anxiety. (Early-career academic)

6.5 Elderly relatives

Many of the academic women in the study referred to elderly relatives such as parents or grandparents sharing the home during the lockdown period. Although sometimes the older relatives assisted with child- and homecare, in most cases they were identified as others who needed the attention of the academic woman at home. “Given traditional gender-role expectations that mothers' primary responsibility should involve caring for children, [elderly parents] work-interfering-with-family conflicts may create more distress for working mothers.” (Borelli 2016:358).

The range of care activities during the lockdown period included trips to the pharmacy and shops for medication and essentials. At times it also meant accompanying the elders on visits to the doctor or hospitals for scheduled appointments. Another duty was helping them with the administration of their finances and other business. Such care usually falls to the daughters, mused one established academic without children and, depending on the degree of care required, the task could be onerous:

I know of an academic colleague with a 90-year-old, bedridden mother because the [usual] caregiver was also under lockdown. I am caring for an 87-year-old father who is diabetic, has hypertension and fears the unknown and death through Covid-19”.

Another stressor for academic women with elders at home was “the fear of bringing home the virus to infect granny or [the] toddler” after going to the shops or doing other essential errands, as reported by one experienced academic. The constant concern for the frail health of elderly relatives loomed large in the accounts of academic women.

The duty of care for the elderly, whether in or outside the house, was simply one of many care responsibilities shouldered by academic woman during lockdown; thus, the negative impacts on teaching and research were unavoidable, as one woman related:

Dealing with the mental and emotional states of my partner, elderly parents, and other family members (who do not live with me) was at times emotionally draining and had a very high impact on my academic work, especially during the levels 5 and 4 of the lockdown. (Established academic without children)

6.6 Those in the broader support system

It is perhaps a peculiar feature of South Africa's settler-colonial heritage that for white and middle-class homes, much of what happens in and around the house is propped up by an elaborate system of supporting non-white actors. At home, there is the gardener, the domestic worker, and sometimes a nanny or au pair for the children; some of these might be live-in

workers. The pandemic meant that these workers remained in lockdown as well, thereby cutting off a vital source of support to the family in general, as the words of these two academic women attest to:

I am unused to doing housework as I have always had a housekeeper or at least a cleaning lady for day or two per week ... Now my husband and I do all the housework as we do not want the cleaning lady to come here by taxi or to infect us from her own contacts. (Established academic without children)

All of my planned and usual support network for juggling career, home and children were gone: no grandparents for fear of making them sick, no domestic help and no schooling. (Mid-career mother of an infant and a toddler)

Outside the home, schools were not only places to send children to for care and learning but also to occupy their time. Schools closed during the lockdown and later opened only partially to enable some degree of social distancing among children. Whether fully closed or partially opened, the absence of school as an external support system had major implications for women's academic work and relationships within the home.

The absence of these vital support structures transferred their functions, in the main, to women in the home who tried to 'juggle' the old and new responsibilities to keep the family unit intact. It also contributed to the reconfiguration of familial relationships, with significant stress generated in the interactions between mothers, children, husbands, and extended family members.

6.7 A note on class and its impact on familial relationships

One of our respondents made a crucial observation that speaks to gradations of social class even within the broadly middle-class population of academics: "Working with 'women academics' can thus include a very broad and varied range of people", as one mid-career academic without children noted. This observation came through strongly in the second and third readings of the data: subtle but real differences emerged that inevitably affect family relationships in different ways. Consider these contrasting vignettes that express the different experiences of physical space occupied by academic women during the lockdown:

First pair:

I've been privileged to enjoy economic security and a comfortable living standard, so I learnt to enjoy the new freedoms of organizing my own time. (Established academic without children)

I do not have a separate office area at home where I could close the door and concentrate. I set up my 'office' in the lounge as it was the only room available with space needed to set up a desk. (Experienced academic with a child in primary school)

Second pair:

I am privileged to live in a comfortable house and with sufficient income (established academic without children); my home environment is conducive to working and I have managed to adapt rather well (experienced academic without children); I am warm, comfortably housed, with a salary and plenty of food – I am one of the greatly privileged (established academic without children).

I found that working from home full-time, with my partner, in our very tiny bachelor apartment to be very difficult over lockdown. I struggled without having a defined workspace of my own as I am extremely sensitive to and affected by the emotions/moods of others, in this case my partner, without a physical barrier (i.e. a door or wall) between us. (Early-career academic with no children)

These contrasting accounts demonstrate the need for further research to look beyond generalizations about academic women as a group that is assumed to share the same class status. Such fine-grained studies will tease out how familial relationships are affected by the degree of economic security and physical space available to different classes of women academics.

7. Conclusion

This study has demonstrated the complex ways in which COVID reconfigured family lives in South African households which influenced the impact on women academics within higher education systems. In South African households at least, the evidence indicates that the scrambling of family relations during the pandemic has had and continues to have a significant impact on the work of academic women, their productivity, and their careers.

Following complexity theory, we have shown that the self-organization of domestic ecologies has impacted more negatively on women than on men. The elimination of gender disparities in education lies at the heart of the education goals. The intensification of academic work and its differential impacts on women also undermines gender equality commitments in development, the goal of decent work and sustainable growth and of course the health and well-being of academic workers, in this case.

As has been done for labour markets more broadly (Soderger, Kapsos & Karkee, 2022), specific work needs to be done on the enduring consequences of pandemic disruption for the attainment of the development goals in the context of higher education. For example, in order to comprehend pandemic consequences, we must first comprehend how both stable and unstable variables inside the system influence academic women's work. The non-linear effects of the pandemic, as well as any other disruptions to family life must be considered. Moreover, as families emerge from pandemic conditions, special attention must be paid to how elements of the system work together or not. If not, the pre-pandemic commitments of various agendas for sustainable development will simply not be met in higher education environments still under strain from successive COVID disruptions.

8. Recommendations

In research terms, much more fine-grained analyses of the long-term effects of the pandemic's disruption of women's academic work, and indeed on family relationships at home, are needed. How and in what ways will families and work be reset in the years following the pandemic? This suggests longitudinal studies of Covid's social and academic effects centred on the home.

In policy terms, there are clear indications of how institutions need to support academic women differently than before the pandemic, given the compounded nature of their work and workloads that human resources offices seemed oblivious to during the lockdown periods. Interventions like childcare for staff, flexible working hours, and the reset of promotion clocks are among the important policy measures that could make a difference in the lives of academic women.

The pandemic and its wide societal impacts pose a threat to the development of female academics in the South African academy. Responses to the Covid-19 lockdown exhibit the non-linear behaviour in families that were not anticipated at the beginning. Given the unpredictability of complex adaptive systems, women academics found themselves in a position of assessing risks, assessing spaces, and questioning the functioning of their partners' roles. A complexity paradigm calls for university leadership to face prevailing systemic challenges, current policy goals, and the problems of inertia within the higher education system as it exists today.

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