The Transdiagnostic Role of the Basic Psychological Needs in Psychopathology

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Abstract

Self-Determination Theory (SDT) states that the satisfaction of individuals' basic psychological needs for autonomy, competence, and relatedness is crucial for well-being and thriving, whereas the frustration of these needs is assumed to engender ill-being and even psychopathology. This article presents an overview of the work done on the relation between the basic psychological needs for autonomy, competence, and relatedness and psychopathology. Current empirical evidence suggests that especially need frustration plays a crucial role in different types of psychopathology, thereby emphasizing the transdiagnostic role of the needs. This chapter also discusses different ways in which especially need frustration can relate to psychopathology and how this fits within the broader transdiagnostic literature. Finally, important avenues for future research are identified.

Keywords: basic psychological needs, Self-Determination Theory, psychopathology, transdiagnostic.

Psychopathology refers to the presence of a mental disorder where an individual experiences a serious level of functional impairment and suffering, which is involuntary in nature (Widiger, 1997). A vast amount of studies and theories have indicated that the pathways to psychopathology "involve causal processes that act both at micro levels and macro levels, that act within and outside of the individual, and that involve processes best understood from biological, psychological, and sociocultural perspectives" (Kendler, 2008, p. 695). In this chapter, I will focus mainly on the Basic Psychological Needs Theory (BPNT), one of Self-Determination Theory's (SDT) mini-theories, where both sources and consequences of need satisfaction and frustration can range from biological to socio-cultural domains. When individuals' needs are satisfied, they experience a sense of volition and choice in their behaviors, feelings and thoughts (i.e., autonomy satisfaction), feel a sense of mastery and efficacy in striving for personally important goals (i.e., competence satisfaction), and have the feeling that they are connected with and care for important others (i.e., relatedness satisfaction). Frustration of these needs is characterized by an active undermining of these essential feelings, where individuals experience a sense of pressure (i.e., autonomy frustration), failure (i.e., competence frustration), and isolation or exclusion (i.e., relatedness frustration). One of the core tenets of BPNT is that the satisfaction of these basic psychological needs is essential for individuals' growth, well-being, and adjustment, whereas the frustration of these needs predicts problem behavior, ill-being, and psychopathology (Ryan et al., 2016; Vansteenkiste et al., 2020; Vansteenkiste & Ryan, 2013). In line with this formulation, research concerning the implications of both need frustration and need satisfaction in psychopathology has been increasing. Examining the role of the psychological needs in psychopathology seems especially imperative given the increase of psychological distress and major depression in the past decade, especially among adolescents and young adults (Twenge et al., 2019).

In this chapter, I begin by describing extant research that has shed light on the relation between the basic psychological needs and several forms of psychopathology, followed by an account of the etiological, symptomatic, and reciprocal role of the needs in psychopathology. After situating SDT and the needs within a broader hierarchical, dimensional, and transdiagnostic account of psychopathology, several pathways through which vulnerabilities can result in experiences of need frustration are discussed. Finally, several important directions for future research are highlighted.

1. The Transdiagnostic Role of the Basic Psychological Needs

Within the past century, mental health problems have been categorized using formal taxonomic systems, with the current DSM-5 covering some 541 diagnostic categories (American Psychiatric Association, 2013). Such an approach to psychopathology is, however, limited in explaining the frequently encountered comorbidity among psychiatric diagnoses, the heterogeneity in symptomatology within diagnoses, and the finding that most clinical treatments are effective across diverse forms of psychopathology (Dalgleish et al. 2020). These challenges to the current categorical approach to psychopathology have spurred interest in and resulted in growing empirical evidence for a common psychopathology factor (i.e., p-factor) in the development of psychiatric disorders (e.g., Caspi et al., 2014), with transdiagnostic factors being assumed to underlie diverse forms of psychopathology. Given that much of the work on transdiagnostic processes is atheoretical (Dalgleish et al., 2020), there is a need for a theory transcending the current diagnosis-specific frameworks. SDT has the potential to move this recent field forward, by providing a theoretically parsimonious model in the explanation of psychopathology with the psychological needs playing a key role in diverse manifestations of psychopathology. On a practical level, employing SDT as a guiding theoretical framework in transdiagnostic psychological treatments is promising, as it

enables one to kill two birds with one stone by addressing the psychological needs. Indeed, a vast amount of meta-analyses and reviews have now provided evidence for the equivalence or superiority of such transdiagnostic psychological treatments over diagnosis-specific intervention or treatment-as-usual (see also Dalgleish et al. 2020).

Studies shedding light on the transdiagnostic role of the psychological needs in psychopathology can be divided into two research lines, with most studies showing accumulated evidence (i.e., first research line) and a few studies indicating direct evidence (i.e., second research line) for the transdiagnostic role of the psychological needs. Within the first research line, an accumulated amount of studies has examined the relation between the psychological needs and various forms of psychopathology. Regarding the second research line, studies have directly aimed to examine the transdiagnostic role of the needs, by examining whether the inclusion of the psychological needs in the prediction of several forms of psychopathology would reduce the strength of the relation between different symptoms of psychopathology (indicating that the needs account for the comorbidity between different symptomatologies).

1.1 The Basic Psychological Needs as Transdiagnostic Factors: Accumulated Transdiagnostic Evidence

Most of the studies on the link between the needs and psychopathology have together provided evidence for the transdiagnostic role of the psychological needs by showing that the psychological needs are implicated in several forms of psychopathology (Vansteenkiste & Ryan, 2013). First, focusing on the satisfaction of the psychological needs, reduced need satisfaction was found to be positively related to for instance non-suicidal self-injury (Emery, Heath, & Mills, 2016), schizophrenia (Cooper et al., 2015), and attention deficit hyperactivity disorder (ADHD) symptomatology (Rogers & Tannock, 2018), whereas increases in need satisfaction in clinical groups have been found to predict a decrease in depression and anxiety

(through a reduction in negative automatic thoughts; Dwyer et al., 2011) and a rise in autonomous motivation throughout treatment, which, in turn, related to increases in body mass index in a subgroup of patients with anorexia nervosa (Van der Kaap-Deeder et al., 2014).

Although historically research within SDT has focused on the effects of need satisfaction, more recent findings indicate that frustration of these needs is critical in the prediction of ill-being or even psychopathology, with such frustration implying the active obstruction and undermining of psychological needs. In line with this, SDT postulates that the needs account for both the "bright" and "dark" side of individuals' functioning (Ryan et al., 2016; Vansteenkiste & Ryan, 2013). Whereas need satisfaction mainly predicts individuals' growth and wellness, experienced need frustration is a crucial predictor of malfunctioning and ill-being.

Indeed, an increasing amount of studies has shown that need frustration is crucial in the prediction of symptoms of psychopathology, such as for instance ADHD symptomatology (Oram et al., 2020), borderline personality features (Van der Kaap-Deeder et al., 2021), suicidality (van Bergen & Saharso, 2016), and burnout (Huyghebaert et al., 2018). Several studies have also directly compared the role of both need satisfaction and need frustration in the prediction of psychopathology versus adaptive outcomes. In one of such earlier studies, it was shown that athletes' need satisfaction related to positive outcomes associated with sport participation (i.e., vitality and positive affect), whereas need frustration was a more consistent predictor of maladaptive outcomes (i.e., disordered eating, burnout, depression, negative affect, and physical symptoms) (Bartholomew et al., 2011). Similarly, Heissel et al. (2018) showed among a diverse sample of university students, working adults, and senior adults that life satisfaction was predicted by both need satisfaction and need frustration, whereas depressive symptoms were only predicted by need frustration. Another recent study showed

that experienced need frustration related to a higher level of symptoms of Internet Gaming Disorder partially via poorer self-control, with need satisfaction showing an opposite but less strong pattern of relations (Mills & Allen, 2020). Further, employing a longitudinal design, need frustration (but not need satisfaction) has been found to predict increased symptoms of somatization, depression, and anxiety among high school students across a nine-month period (Cordeiro et al., 2016). Finally, daily fluctuations in the frustration (but not satisfaction) of each need have been found to relate to daily levels of binge eating symptoms (Verstuyf et al., 2013). So, with some notable exceptions (e.g., Boone et al., 2014), studies comparing the effects of need satisfaction and need frustration indeed seem to point out the unique role of need satisfaction and need frustration in, respectively, the "bright" and "dark" path of human functioning.

1.2 The Basic Psychological Needs as Transdiagnostic Factors: Direct Transdiagnostic Evidence

Besides studies focusing mostly on one form of psychopathology and together in an accumulated fashion showing the importance of the psychological needs across diverse forms of psychopathology, there has also been a recent interest in directly testing the transdiagnostic role of need frustration. That is, Campbell et al. (2018a) showed that need frustration not only predicted both depressive symptoms and eating pathology, but also that introducing need frustration as the underlying source of both symptoms resulted in the concurrent relation between depressive symptoms and eating pathology to become statistically non-significant. Similarly, Depestele et al. (2021) found that need frustration predicted drive for thinness as well as internalizing symptoms in patients with a restrictive or binge-eating/purging eating disorder subtype, while also diminishing the co-occurrence of both these types of symptoms. Employing a heterogeneous sample of non-clinical and clinically-referred adolescents, Brenning et al. (2021) showed that need frustration partially mediated the relations from

dysfunctional emotion regulation to internalizing as well as externalizing problems, with a drop in the strength of the relation between these two types of symptomatology after accounting for need frustration. Such findings show that need frustration is an underlying transdiagnostic mechanism, as it is not only predictive of diverse forms of psychopathology but also explains why there is a high degree of comorbidity between certain disorders. This is highly informative for clinical practice and research, as it indicates that need frustration is a common cause for different types of pathologies which is in line with the concept of multifinality (i.e., the same starting point can result in different outcomes).

2. The Etiological, Symptomatic, and Reciprocal Role of the Basic Psychological Needs in Psychopathology

Given the increasing evidence of the importance of the psychological needs (especially need frustration) in diverse forms of psychopathology, it is crucial to determine what the exact relation is between the needs and psychopathology. Specifically, need frustration is expected to be associated with symptoms of psychopathology in both more direct and indirect ways. First, need frustration has a direct role in the etiology of many forms of psychopathology (Ryan et al., 2016), with individuals experiencing the direct costs of need frustration. For instance, experiencing prolonged competence frustration (e.g., because of being unwillingly unemployed or because one has highly demanding parents) can directly lead to feelings of helplessness, amotivation, and depressed mood (i.e., symptoms of depression).

Need frustration can, however, also be indirectly linked to diverse forms of psychopathology through several maladaptive mechanisms that aim to cope with prolonged need frustration. One of those mechanisms involves *need substitutes*, where individuals try to compensate for experiences of need frustration through goals or behaviors that produce a

short-lived feeling of need satisfaction but eventually are maladaptive (Deci & Ryan, 2000). In this case, individuals can strive for extrinsic goals such as pursuing attractiveness, materialistic goods, or social status, which contrasts with intrinsic goals including the pursuit of self-development and contributing to the society (Kasser & Ryan, 1996). Striving for extrinsic goals, such as pursuing materialistic goods, has been found to relate to a higher level of need frustration and a lower level of need satisfaction (Unanue et al., 2014). Such need substitutes can be key in the development or maintenance of psychopathology. For instance, individuals diagnosed with anorexia nervosa have been found to perceive their disorder as increasing their sense of mastery, mental strength and self-confidence (i.e., competence), their identity (i.e., autonomy), and their experienced care and support from others (i.e., relatedness) (Nordbø et al., 2006). Thus, through the pursuit of an extrinsic goal (i.e., attractiveness), these individuals are able to experience a sense of need satisfaction. Such experiences are, however, artificial as they do not contribute to individuals' wellness, but instead engender maladaptive functioning, including for instance health problems, social isolation, and dependency on others. Indeed, looking at the overall functioning, individuals with anorexia nervosa report an increased amount of frustrating experiences in other (outside of their eating disorder) areas of their life, as indicated for instance by strained relationships (Carter et al., 2012). Thus, this experienced need satisfaction often only applies to the domain of psychopathology, which forms a more easy and quick way of obtaining instant need satisfaction. For instance, whereas experiences of competence in the academic or work domain often require persistent effort across a long period, feelings of mastery concerning obtaining weight goals can relatively easy be obtained and experienced (e.g., through compliments or looser fitting clothes) (Selby & Coniglio, 2020).

Besides need substitutes, individuals can also react to need-frustrating experiences by *compensatory behaviors*, where individuals are focused on fighting against or numbing

negative feelings associated with need frustration. Three classes of compensatory behaviors can be distinguished: (a) releasing self-control, (b) rigid behavioral patterns, and (c) oppositional defiant behavior (Deci & Ryan, 2000; Vansteenkiste & Ryan, 2013). With respect to *releasing self-control*, individuals experiencing chronic need frustration engage in behaviors such as binge eating (Boone et al., 2014), alcohol abuse (Knee & Neighbours, 2002) and smoking (Niemiec et al., 2009) to temporarily relieve some of those negative feelings. Similarly, individuals can engage in excessive gaming, with one of the criteria for Internet Gaming Disorder as proposed in the Diagnostic and Statistical Manual of Mental Disorders-V (American Psychiatric Association, 2013) referring to being involved in playing games to escape negative feelings. This is also in line with the need-density hypothesis which states that individuals' addiction to gaming is strongest when they experience low need satisfaction in the real world but high need satisfaction in video games (Rigby & Ryan, 2011), referring thus to gaming addiction as a form of compensatory behavior.

Also, engaging in *rigid behavioral patterns* such as those associated with anorexia nervosa (e.g., setting high, unrealistic standards) can, temporarily, serve as a way of experiencing structure, stability and predictability (Nordbø et al., 2006). Indeed, in one of the most prominent models of anorexia nervosa, Fairburn et al. (1999) argue that a persistent desire for self-control (likely to originate from feelings of pressure or incompetence) can foster the onset of anorexia nervosa. Such self-control is exercised through eating behaviors focusing on losing weight and reaching a thin ideal, and represents a way of not only controlling one's self but also one's environment and interpersonal relationships. In the long run, however, engaging in such rigid behavior not only inhibits individuals from seeing the actual cause of their need frustration, but can also increase their ill-being when they are unable to sustain these rigid behaviors (e.g., failing in meeting their high standards).

Finally, individuals can also respond to prolonged need frustration by bluntly rejecting rules and doing the opposite of what is expected from socializing or authority figures, as a way of breaking free from the feeling of being controlled (Vansteenkiste et al., 2014). Although such *oppositional defiance* can bring some brief relief, in the long run this engenders alienation from one's sense of self and personal preferences (Van Petegem et al., 2015) and can result in externalizing problems such as aggressive behaviors.

Need substitutes often go hand in hand with compensatory behaviors. For instance, when individuals strive for attractiveness (i.e., need substitute), they can do so by engaging in rigid behavior (e.g., reducing their food intake to a minimal level). Indeed, in a recent study focusing on muscle dysmorphia (i.e., a psychopathological preoccupation towards having a muscular body) among men, it was shown that need frustration related via a drive for muscularity (i.e., need substitute) to muscle dysmorphia symptoms (i.e., rigid compensatory behaviors), including for instance excessive body work out and the use of anabolic steroids (Selvi & Bozo, 2020).

Besides the direct and indirect (through coping mechanisms) etiological role of need frustration in psychopathology as discussed above, need frustration can also be a symptomatic factor in varied forms of psychopathology (Ryan et al., 2016). That is, because all psychopathology is a breakdown in full functioning, need frustration will be evident across most if not all pathologies. To illustrate, frustration of the needs for autonomy (presented as identity problems) and relatedness (presented as affective instability and negative relationships) is an inherent part of the symptomatology of individuals with borderline personality disorder. In that way, need frustration is not necessarily a cause of the pathology (e.g., borderline personality disorder), but rather constitutes an essential part of the nature of this disorder.

Given the predominant use of cross-sectional designs and the scarcity of longitudinal and experimental studies in the examination of the link between the psychological needs and psychopathology, it is currently difficult to determine in which disorders need frustration plays a (direct or indirect) etiological or symptomatic role. Moreover, possible reciprocal relations between need frustration and psychopathology have yet to be fully examined. Presumably, the needs not only predict symptoms of psychopathology, but psychopathology in itself can frustrate the needs for autonomy, competence, and relatedness. For instance, it could be the case that a continuous low mood, low self-esteem, and not being able to enjoy things in life (all symptoms of depression), could prevent individuals from forming and maintaining close relationships, thereby engendering relatedness frustration. Indeed, research has shown that depressive symptoms predict an increase in thwarted belongingness across four weeks (O'Keefe et al., 2016), pointing to the possibility that depression could also increase the likelihood of relatedness frustration.

3. SDT and the Hierarchical Taxonomy of Psychopathology

As discussed previously, increasing research and theorizing points to the importance of transdiagnostic factors underlying psychopathology (e.g., Caspi et al., 2014). One of the most prominent models in this regard is the Hierarchical Taxonomy of Psychopathology (HiTOP; Conway et al., 2019). The HiTOP is a data-driven hierarchical model including several levels differing in specificity, with a general psychopathology factor at the top and specific traits or symptoms (e.g., anxiety, aggression, or reality distortion) at the bottom. At the second broadest level, several factors or spectra are identified of which the internalizing, externalizing (with a disinhibited and antagonistic subtype), and thought disorder factors are the most established. These three factors match very well with the three types of psychopathology that are identified from a SDT perspective (Ryan et al., 2016), where

especially the need for autonomy plays a transdiagnostic role. These three types refer to internally controlling disorders, disorders related to the impairment of internalization, and fragmented self-functioning disorders. Below I will describe how these three types as identified within SDT can help explain the development and maintenance of the three factors as explicated within the HiTOP.

Ryan et al. (2016) first refer to internally controlling disorders where individuals experience a high level of internal pressure, excessive self-control, and contingent self-worth. Contingent self-worth is characterized by the degree to which individuals base their self-esteem on meeting certain internal or external standards, with failure and success in meeting these standards causing significant fluctuations in one's self-esteem (Deci & Ryan, 1995). This first type of psychopathology matches well with the internalizing spectrum as identified within HiTOP, referring to a large constellation of syndromes, such as fear, distress, eating pathology, and sexual problems (Kotov et al., 2017). Examples of such internalizing or internally controlling disorders are obsessive-compulsive personality, eating disorders, self-critical perfectionism, depression, and anxiety. These disorders are characterized by high levels of anxiety, self-criticism, and self-derogation, which is stated to originate from the frustration of the needs for autonomy and relatedness. Such frustration can occur when for instance parents adopt conditional regard where their love and attention for the child depend on whether the child acts in accordance with parental expectations. Such conditional regard frustrates both the autonomy (feels pressured to behave a certain way) and relatedness (feels less attached to the parent) of the child and can result in the child adopting the parental values in a controlled and rigid manner (resulting in for instance depressive symptoms; Otterpohl et al., 2020).

A second type of disorders identified by Ryan et al. (2016) consists of disorders related to the impairment of internalization which are typified by difficulties in self-

regulation, a low level of valuation of social values, or impulsivity. These disorders are quite similar to the externalizing spectrum as identified within HiTOP, referring to a large constellation of syndromes, such as poor impulse control, aggression, blame externalization, and boredom proneness (Conway et al., 2019). Examples of such externalizing or impairment of internalization disorders are conduct disorder, oppositional defiant disorder, anti-social personality, ADHD, and substance abuse. Within HiTOP, however, a further distinction within this cluster of externalizing disorders is made, thereby distinguishing between disinhibited and antagonistic externalizing disorders. Whereas the disinhibited externalizing disorders are characterized by a high level of impulsivity without consideration for possible consequences, the antagonistic externalizing disorders are typified by conflict and antipathy in interpersonal relationships and little consideration for other people's emotions (Krueger et al., 2021). The impairment of internalization disorders as identified within SDT (Ryan et al., 2016) mostly refer to these antagonistic externalizing disorders, and it is hypothesized that such disorders can result from experienced thwarting of all three psychological needs. Specifically, children from parents who act in a controlling, cold, and chaotic manner, are less likely to assimilate the values the parents model. That is, in order for individuals to fully identify with and integrate values promoted by the social context, they need to see the personal value of those rules (cf. autonomy), experience a sense of connection and trust related to the person communicating the rules (cf. relatedness), and feel competent to abide by the rules (cf. competence). Indeed, among both community and clinical samples, Van Petegem et al. (2015) showed that a controlling parenting style related to a higher degree of externalizing problems through increased autonomy need frustration and reactance. Thus, thwarting of the needs can be detrimental in socialization processes and increase the likelihood of the development of externalizing or impairment of internalization disorders. Note that disinhibited externalizing disorders (e.g., substance abuse) as identified within

HiTOP can also have their origins in need frustration, through engaging in the release of self-control (i.e., a subtype of compensatory behaviors) as a way of coping with experienced need frustration (Knee & Neighbours, 2002), as discussed earlier.

A final and third type of disorders identified within SDT are disorders related to fragmented self-functioning (Ryan et al., 2016), which match with the factor of thought disorders within HiTOP referring to a constellation of syndromes such as eccentricity, cognitive/perceptual dysregulation, unusual beliefs and experiences, and fantasy proneness (Conway et al., 2019; Kotov et al., 2017). Examples of such thought disorders or fragmented self-functioning disorders are borderline personality, dissociative identity disorder, psychotic disorders, and bipolar I disorder. Typical for these disorders is that they are likely to be associated with severe frustration of the psychological needs. Prolonged or severe thwarting of especially the needs for autonomy and relatedness through for instance harsh and punitive parenting or sexual and physical abuse can result in decreased integrated functioning in the child (Ryan et al., 2016). Such traumatic experiences can therefore result in personality structures where the different elements are not well-connected, and individuals have difficulties in connecting with their true self. Vonderlin et al. (2018) indeed showed in a meta-analysis including 65 studies that victims of childhood abuse and neglect had higher levels of dissociation compared with non-abused or neglected subsamples, with even more pronounced levels of dissociation with earlier, longer, and parental abuse.

Whereas the HiTOP represents an increasingly well-validated model incorporating a dimensional classification of psychopathology (Conway et al., 2019), SDT represents an empirically grounded macro-theory of normal and atypical development with the psychological needs as the unifying factor (Vansteenkiste & Ryan, 2013). As highlighted above, a cross-fertilization between both models is fruitful, given that the transdiagnostic role

of the psychological needs fits well into the hierarchical approach of the HiTOP where several groups of symptomatology are identified that are relevant across different diagnoses.

4. The Basic Psychological Needs and Other Transdiagnostic Factors

Given the increased focus on hierarchical models of psychopathology where transdiagnostic symptomatology is a crucial element, research into factors that can explain this transdiagnostic symptomatology has been rising. An important next step in research is to determine the unique effects of and also the synergy between different transdiagnostic factors, such as the basic psychological needs, repetitive negative thinking, sleep, cortisol, and emotion regulation. For instance, in the light of studies showing that sleep can result in depressed mood and poor concentration (e.g., Borsboom, 2017) and that need frustration and poor sleep are reciprocally related (Campbell et al., 2018b), it would be interesting for future research to further examine the interplay between these two proximal transdiagnostic mechanisms in the prediction of different forms of psychopathology. Also, an increased cortisol response (to evaluative tasks) has been found to be implicated in several pathologies, with such a response also being linked to a lower level of autonomous motivation (Steel et al., 2021). Similarly, an increasing amount of studies employing an SDT perspective have examined the interplay between the needs and emotion regulation. Pointing towards the transdiagnostic role of emotion regulation, deficits in this domain have been found to relate to a diversity of psychological disorders, including depression, anxiety, eating disorders, and conduct disorders (see Aldao et al., 2016). Although both the basic psychological needs and emotion regulation have been indicated as transdiagnostic factors, they likely effect symptoms of psychopathology in a reciprocal manner. First, emotion regulation is assumed to influence the needs, with for instance emotion dysregulation where individuals feel overtaken by their emotional response resulting in increased feelings of failure (i.e., competence

frustration), an external locus of control (i.e., autonomy frustration), and difficulties in connecting with others (i.e., relatedness frustration). On the other hand, individuals' unique way of dealing with emotions is also likely to be rooted in their history of need satisfaction and frustration. To illustrate, children who experience their parents to be low in perspective-taking and in the acknowledgement of their emotions, will experience need frustration and are more likely to develop maladaptive emotion regulation strategies (such as suppression). Indeed, although some studies found need frustration to mediate the effects of emotion regulation on symptoms psychopathology (Brenning et al., 2021; Van der Kaap-Deeder et al., 2021), other studies have indicated that experiences of need satisfaction (for instance stemming from parental autonomy support) also predict emotion regulation. To illustrate, Brenning et al. (2015) found that parental autonomy support predicted increases in emotional integration (relating, in turn, to increases in self-esteem) and decreases in suppressive regulation (relating, in turn, to decreases in depressive symptoms). Pointing towards the reciprocal relation between emotion regulation and the needs, this study also showed emotional dysregulation to predict decreases in autonomy-supportive parenting. More such studies on the interplay between transdiagnostic factors are needed to further understand their unique, interactive, or reciprocal role in psychopathology.

5. The Interplay between Need Frustration and Vulnerabilities: Three Pathways

The development of psychopathology often involves multiple different domains, with genetic vulnerabilities forming an important source. For instance, about 56% of the variance in anorexia nervosa is due to additive genetic effects (Bulik et al., 2006). Additionally, the interplay between predispositional vulnerabilities, such as genes but also more stable personality characteristics (e.g., temperament), and contextual experiences (e.g., need-thwarting context) also plays an important role in the onset and maintenance of

psychopathology. Indeed, evolutionary-biological reasoning indicates that some individuals are more vulnerable to the negative effects of adversity (i.e., the diathesis-stress view of psychopathology; Monroe & Simons, 1991) or that certain individuals are more malleable or susceptible to both adverse and supportive contexts (i.e., the differential susceptibility hypothesis; Belsky & Pluess, 2009). Within SDT, literature concerning this interplay is rather scarce and has mainly focused on possible vulnerability factors (i.e., in line with the diathesis-stress view). Based on Caspi and Roberts' (2001) theory on transactions between personality and context (see also Vandenkerckhove et al., 2020), at least three possible pathways from vulnerabilities to psychopathology can be identified, namely a proactive, evocative, or reactive pathway.

First, individuals with a specific vulnerability might directly generate need-frustrating experiences by selecting or creating certain types of activities and contexts (i.e., *proactive pathway*). For instance, individuals scoring high on self-critical perfectionism (i.e., a vulnerability factor situated at the personal level) tend to set very high standards for themselves, thereby increasing the chances for experiencing failure and inadequacy (i.e., competence frustration). A second possible road from vulnerability to psychopathology consists of evocative mechanisms in which experiences of need frustration are more indirectly evoked through reactions from others on individuals' unique characteristics (i.e., *evocative pathway*). For instance, individuals with a more difficult temperament display more negative affect and emotional lability, which in turn may cause interpersonal difficulties resulting in feelings of social isolation or exclusion (i.e., relatedness frustration). Third, through affecting the perception of and reaction to events, contexts or persons, vulnerabilities can cause need frustration (i.e., *reactive pathway*). That is, individuals interpret the world around them based on their existing understanding of themselves and others. A negative attitude towards the self can therefore results in interpreting experiences in a more negative

way, resulting in a possible discrepancy between the real and experienced events. For instance, although many individuals with anorexia nervosa actually display a high level of success in for instance the athletic domain (Arcelus et al., 2014), they report a high level of experienced incompetence with respect to nonweight loss based activities (e.g., Bers & Quinlan, 1992). Also, scoring high on self-critical perfectionism has been found to relate to a stronger negative reaction to failure, resulting in increased rumination and avoidance and less acceptance with respect to the failure experience (Van der Kaap-Deeder et al., 2016).

The theorizing and research discussed above thus suggests that certain personal characteristics can make individuals more vulnerable to (the effects of) need-frustrating experiences. Besides this interplay between such personal vulnerabilities and need frustration, it is also important to consider the interplay between negative life events as an indicator of vulnerability and experiences of need satisfaction and frustration. That is, overall experienced need satisfaction and frustration might be especially important when facing adversity, with need satisfaction potentially forming a buffer against such experiences and need frustration accelerating or reinforcing the negative effects of life stressors. To illustrate, when individuals experience stressors such as the loss of a loved one, a divorce, or financial difficulties, they are more likely to overcome such difficulties when they feel supported and loved by others (i.e., relatedness satisfaction), have the capabilities to deal successfully with the current situation (i.e., competence satisfaction), and are aware of their life goals and feel they have a choice in determining their life course (i.e., autonomy satisfaction). In contrast, individuals who feel disconnected from others, insecure about their coping capabilities, and who experience pressure disconnecting them from their personal life goals, are less likely to deal effectively with negative life events. Some extant research indeed points out the buffering effect of need satisfaction and the deteriorating effect of need frustration in the face of adversity. Weinstein et al. (2016), for instance, examined the effects of an intervention

aimed at increasing need-satisfying experiences in refugees of Syrian civil unrest who are going through a major negative life event. It was found that such an intervention not only decreased need frustration, but also alleviated symptoms of depression and generalized stress (but not PTSD). Relatedly, Bureau et al. (2012) showed that individuals who exhibited a high level of autonomy, were less affected by negative life events in terms of suicide ideation. Such findings thus show that experiences of need satisfaction can play a buffering role in the development or maintenance of psychopathology, perhaps by shifting the attention away from need-frustrating experiences, by providing individuals with the necessary energy and tools to cope with need frustration, or by stimulating individuals to reappraise the stressors as controllable fueled by feelings of autonomy (Bureau et al., 2012; Campbell et al., 2018b; Weinstein et al., 2016).

6. Directions for Future Research

Research thus far indicates that especially need frustration (and not or to a lesser extent need satisfaction) is related to symptoms of psychopathology (Vansteenkiste & Ryan, 2013). For instance, experiencing active exclusion from important others is expected to be more predictive of symptoms of psychopathology, than experiencing loneliness. It is, however, important to interpret these findings with caution, as prolonged (across time) or extended (across contexts) decreased need satisfaction is likely to also forecast psychopathology, such as depressive symptoms. For instance, experiencing loneliness (but not social exclusion) across several years or within several important relationships, can increase individuals' vulnerability for psychopathology. Pointing towards the importance of the inclusion of the absence of positive experiences in research on psychopathology, research within the domain of depression indicates that not only increased negative affect, but also decreased positive affect is typical for individuals with a depression (Vanderlind et al., 2020).

The overall minimal role of need satisfaction in terms of individuals' psychopathology symptoms in the extant research could be due to the design of these studies. That is, current studies on the role of need satisfaction in psychopathology have mostly focused on need satisfaction as experienced in the here and now, or within specific domains. Integrating retrospective assessments of the needs (Van der Kaap-Deeder et al., 2020), focusing on an accumulated account of need satisfaction or frustration across an extended period of time, in research on psychopathology might be helpful in this regard as will assessments of need satisfaction across different important life domains. For instance, experiencing a low level of choice within one domain or across a short period of time (e.g., during once class) might not engender psychopathology, but experiencing a low level of choice for several months or across diverse domains might result in increased feelings of helplessness.

Although there are some studies indicating certain personality factors (e.g., self-critical perfectionism) to represent vulnerability factors in the context of need frustration, this literature is scarce. Further, more research is needed on the differential susceptibility hypothesis (Belsky & Pluess, 2009) within the context of the basic psychological needs, as to answer the question on whether there are certain personal, physiological or endophenotypic, or genetic characteristics that might increase individuals' sensitivity to experiences of need satisfaction and frustration, with perhaps some individuals profiting more from need satisfaction and suffering more from need frustration. For instance, attachment security (which has been associated with a high level of need satisfaction; La Guardia et al., 2000) has been shown to relate to increases in emotion regulation, with this effect being strongest among individuals with the 5-HTTLPR (i.e., the serotonin-transporter gene) short-allele, in line with the differential-susceptibility hypothesis (Viddal et al., 2017).

Finally, there are several important methodological limitations in extant research on the link between the basic psychological needs and psychopathology. First, as reviewed in this chapter, studies focusing on the role of the needs in psychopathology have focused on quite diverse types of psychopathology (e.g., depressive symptoms, anxiety symptoms, borderline personality features, and binge eating symptoms), but the vast majority of these studies have not included clinical samples, limiting generalizability to those populations. Further, most studies within this domain employed a cross-sectional design, which do not shed light on the directionality of effects, making it difficult to determine whether the needs predict psychopathology or vice versa (or both). Thus, more longitudinal studies and intervention research will add to knowledge of how needs link both to pathology and its amelioration.

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